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COMPUTERWORLD

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IBM revamps price schemes

USERS GAIN FLEXIBILITY IN MAINFRAME SOFTWARE BUYS

By Jaikumar Vijayan

IBM IS TAKING a sledgehammer to its mainframe software pricing structures.

In a major pricing simplification, IBM last week announced that it is condensing its nine licensing categories into two umbrella schemes — one based on hardware capacity and the other on software usage.

SOFTWARE LICENSING

The new licensing options are aimed at enticing users to try new applications on mainframes while making it cheaper — by as much as 20% in some cases — to run existing ones.

The changes "go a long way to make the costs of mainframe software more affordable," said Richard Tribble, director of the IT department at the Scott and White Clinic and Hospital in Temple, Texas.

"The change in capacity pricing directly affects the high-end customer, and the change in the usage pricing model enables people to explore the S/390 at the low end," agreed Ron Thielen, president of the Share IBM large-system user group and a director at the University of Chicago.

There are caveats: The bene-

IBM, page 88

ECONOMIC TSUNAMI

▸ *Currency crises delay year 2000 repairs at U.S. trading partners*

By Thomas Hoffman and Mitch Betts

The plummeting baht, the weakened yen, the hammered ruble, the devalued ringgit — they're causing economic mayhem around the world that couldn't have come at a worse time for year 2000 computer projects.

Analysts said several Asian countries are about a year or two behind on their millennium projects because of their economic crises — and cash-strapped Russia is just getting started. Even major U.S. trading partners such as Japan and Germany have fallen behind (see map, page 24).

That means U.S. companies need to account for international systems failures in their contingency plans and insulate themselves from offshore snafus, analysts and users said.

As Russia, Japan and Indonesia suffer from currency crises, "their priorities clearly are not going to be year 2000," said Howard A. Rubin,

Crises, page 24

Chicago Merc trades OS/2, NT for NetWare

By Sharon Gaudin

IT EXECUTIVES at the Chicago Mercantile Exchange, one of the largest trading floors in the country, are planning to overhaul their real-time trading system in a bid to increase trading volume, help traders make smarter decisions and bring in more profits.

The plan includes swapping the exchange's IBM OS/2 servers and most of its Microsoft Corp. Windows NT servers for Novell, Inc.'s NetWare 5.0, moving to a 100% IP-based network, buying servers, replacing a Token Ring network with an Ethernet network and replacing about 950 PCs.

All of that should slash service and support time, get applications developed faster and

CME's overhaul, page 88

Buried Web data lies untapped

By Sharon Machlis

MANY INTERNET merchants are compiling a gold mine of information about their users' preferences and shopping habits. The problem is, a lot of it isn't being used.

Yet,

Some World Wide Web executives are simply too busy keeping their sites up, boosting capacity and adding enhancements to cross-match and analyze the mounds of data stashed in various systems. In addition, doing too much matching in real time could conceivably slow system performance, and in the process, drive away potential revenue.

Web data, page 89

The long arm of **Moore's Law** is under **constant scrutiny.** You can't double your **computing horsepower** every 18 months forever, doubters point out. **Maybe not,** but recent microprocessor advances indicate **it'll be a decade** before other laws —those of physics and economics — **put the brakes** on IT's longest-running **joyride.**

In Depth, page 69

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Users caught between IBM, Microsoft app server strategies. Page 4

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Buzzwords are for the birds, so delete them from your mental database, Paul A. Strassmann writes. **Managing, Page 64**

Check out Linux if you need to set up your own intranet on a shoestring budget. **Review Center, page 65**

Georges missed Georgia, but other storms taught Gulfstream Aerospace survival tactics. **Corporate Strategies, page 41**

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EXECUTIVE Briefing

News summary for senior managers

■Zealous recruiters might try to steal your year 2000 project managers, but if you offer your people the right benefits — not just money, but challenges and prestige — they'll see you through. Page 61. And anywhere in your organization, you'd be hard-pressed to ignore the wants of your younger staff. Post-boomers don't like teaming and are more loyal to their skills than their companies — so they're inclined to hit the road for better deals, a career specialist says. Page 41.

■Concerned that a pending merger and an increased focus on electronic commerce would overwhelm IT, Banc One has become the latest large bank to outsource support for its network and computing infrastructure, signing $1.8 billion worth of multiyear contracts with IBM Global Solutions and AT&T Solutions. Page 14. Meanwhile, desktop outsourcing is gathering momentum. Resource-starved corporations are farming out PC management to keep in-house IT workers focused on core functions. The market is expected to rocket to $8.22 billion by 2002. Page 8

■This week on the Web: Office Depot enhances its Web site for corporate contract customers, Wells Fargo pilots smart cards for electronic-commerce transactions, Hollywood insider Richard Frank explains his move to a Web business, and five European portal sites team up to deflect initiatives by U.S. companies on their home turf. All on page 45. While Web commerce is a data-gatherer's dream, most sites have been slow to analyze all the information about their customers. But that's about to change. Page 1

■IBM is simplifying its licensing plans. The goal is to entice users to try new mainframe applications while making existing apps cheaper. Not all IT shops will benefit, but users see the move as an advance. Page 1

■Good hands: Insurance against network security problems is gaining popularity. Cigna is the latest insurer to offer coverage against theft and hacker attacks. To qualify, IT shops must submit to security audits and add equipment such as firewalls. Page 4

■When corporate IT managers worry about their operating systems on the drive home from work, odds are their concern is getting them to work together. Page 47

■Wouldn't it be nice to read or listen to your E-mail, faxes and voice mail on one system? New messaging products let you do just that. Yet the market has been slow to take off. Page 47

■When Algoma Steel implemented some PeopleSoft software, it wanted to change its business practices to fit the package. But workers forced some customization as well. Page 53. Meanwhile, citing cost concerns, Germany's Siemens scrapped its $59 million PeopleSoft project and chose SAP instead. Complex German employment, payroll and data-protection requirements were at least partly to blame.

Online this week

Are you overpaid or underpaid perhaps?

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COMPUTERWORLD
www.computerworld.com/more

Two choices emerge in application server arena

By David Orenstein and Carol Sliwa

IBM'S STREAMLINING of its WebSphere server, transaction and middleware products means two things to the frenzied application server market:

First, to take its expected leadership role, IBM has had to acknowledge that its application server model must at least resemble the coherent, heterogeneous offerings of other vendors in the newly defined market.

Second, by continuing to push Windows NT at low prices, Microsoft Corp. believes it can be a major player with a different approach.

To users, the outcome of those two opposing trends will help determine the future of a market in which they face expensive strategic choices.

CONSOLIDATION LIKELY

Several analysts, including Ted Schadler at Forrester Research, Inc. in Cambridge, Mass., said they believe that the largest vendors — IBM, Oracle Corp., Sun Microsystems, Inc. and Netscape Communications Corp. on one side and Microsoft on the other — will lead the consolidation of the crowded application server market.

Application servers help companies develop, deploy and manage distributed applications. They house the business logic, giving developers a central place to make changes, handle load balancing and juggle the rapid-fire exchange of data between clients and the back end.

Dozens of vendors have scrambled this year to fill that space. Oracle and now IBM are trading on their strong enterprise credibility and scalability, while others have acquired hot start-ups.

Although IBM has collected application server functions from several products into WebSphere to offer a unified package for heterogeneous environments, the company's offering still isn't entirely cohesive.

For example, unlike some competitors, IBM sells its tools separately. Also, IBM offers a separate Performance Pack for load balancing, caching and filtering.

John Rymer, an analyst at Upstream Consulting, Inc. in Emeryville, Calif., said WebSphere standard edition is simply a "placeholder" for the sales force. Many vendors have made sure to support multiple platforms, middleware technologies and the Enterprise JavaBeans (EJB) specification.

But Microsoft is dedicated to selling the NT platform as an application server with little accounting for other platforms or EJBs, analysts said. Instead, it is selling NT-based server components: Microsoft Transaction Server, Internet Information Server and Microsoft Message Queuing.

But that strategy may not cut it for large users, said Nick Gall, an analyst at Meta Group, Inc. in Stamford, Conn.

Indeed, users who have opted for Microsoft's approach to application servers are finding that they can't yet rely solely on Microsoft's offerings.

IBM's WebSphere product line

PRODUCT/SHIPPING	FUNCTIONS
Standard edition Now available	Lets developers connect to databases and simple logic
Advanced edition Due Q1 1999	Will let developers connect to legacy systems via IBM transaction systems, such as CICS, Encina, MQ Series and TX Series; also implements the Enterprise JavaBeans specification and introduces ability to cluster servers
Enterprise edition Due Q2 1999	Adds TX Series transaction systems (CICS, Encina and Encina++) and IBM's Component Broker. IBM won't ship transaction monitors or the Component Broker separately once these products ship with the Enterprise edition

For example, office supply giant Staples, Inc. has a long-term goal of making NT its standard, said James Ray, vice president of corporate systems and strategy development. A cluster of NT servers is inexpensive, powerful and extensible, Ray said.

But the company's applications are based on dozens of platforms, including PeopleSoft, Unix and AS/400. Therefore, along with NT in the middle tier, Staples will have an application server from Sun, Netscape or BEA Systems, Inc. as well as object request brokers from Inprise Corp. or Iona Technologies, Inc.

The Chicago Stock Exchange was also attracted to Microsoft's low prices and easy clustering, said John Kerin, vice president of application development. Many of the exchange's trading applications are based on Windows clients, with Windows NT in the middle tier and an object database from Versant Corp. on the data layer, using Iona's Orbix to handle messaging and Versant to handle the transaction volume. □

Network security under attack? Buy insurance

By Bob Wallace

THIS IS A NEW safety net for network managers who feel like they are walking a high-wire when dealing with critical information technology areas such as security and electronic commerce: insurance.

Insurance companies are starting to team with technology vendors to offer coverage for network security problems if organizations do what it takes — namely undergo security audits and add equipment such as firewalls — to make themselves insurable.

One analyst says insurance is essential. "The bottom line is that hackers are staying one step ahead of technology, which means that no asset can be 100% protected by technology," said Richard Brewer, a senior analyst at International Data Corp. in Framingham, Mass., a sister company to *Computerworld*. "Users need to have a plan for when hackers get in."

The plans can cover both internal and external hacking.

"If there wasn't a risk, people wouldn't buy insurance," said Weston Hicks, an analyst at Sanford C. Bernstein in New York. "Of course there's a risk to insurance companies. They set prices to compensate for the risk."

Niraj Patel, chief information officer at GMAC Commercial Mortgage Corp. in Horsham, Pa., said his company eventually may be shopping for electronic-commerce insurance, such as that offered by a team formed by Sedgwick Group PLC and IBM. "Within a year or two, it would be applicable, since we plan to launch business-to-business electronic-commerce applications on our Web site."

The emerging trend picked up speed last week as Cigna Property & Casualty launched Secure Systems Insurance for network security, and Sedgwick Group debuted coverage for security problems associated with electronic commerce.

Cigna's Secure Systems Insurance does not, however, cover bugs in software or damage done by viruses.

"[IT] is definitely a new area for insurance companies, one that helps them diversify and offer new products and services to corporations," said John Santucci, director of IT insurance practice at KPMG Peat Marwick LLP in Radnor, Pa. "It's important for them to partner with technology companies to understand the risks and the lay of the land for the industry they're entering."

The pioneers were those that offered year 2000 insurance, but users looking for that will have a tough time finding an insurer, as it appears only one firm, AON Risk Services, Inc., is still in the business.

The American International Group Risk Finance in New York stopped writing policies on Sept. 1. "If companies are only coming to consider insurance now, it shows that they're not as proactive in their preparation for year 2000 conversion," a company spokeswoman said. "This isn't the type of risk we would want to insure. And there's not enough time left for them to fund the premium."

Cigna last week teamed with security vendor NetSolve, Inc. and equipment maker Cisco Systems, Inc. to offer its insurance. It covers companies for computer crime that involves theft of money, securities and property; damage by hackers to a company's data or software; and business losses stemming from attacks on a company's computer system.

Sedgwick teamed with IBM and offers security insurance and coverage for hacker damages to World Wide Web sites.

Cigna offers two options: insurance for NetSolve's intrusion monitoring service and a full security audit assessment. However, companies must pay for the security assessments and may have to buy products to address vulnerabilities that are uncovered. Under the Cigna plan, a company with $100 million in revenue that buys $1 million of insurance for computer theft, another $1 million for data damage and $10 million for business interruption, with a $5,000 deductible, would pay a $25,000 annual premium.

"This is exciting stuff because it can really make people sleep easy at night," said Mike Ryal, executive director of national systems at BT Office Products in Deerfield, Iowa. "Businesspeople are nervous with what is spent on technology nowadays." □

A sample of Cigna's network security insurance policy:

Customer: Wholesaler with annual revenue of $50 million	
Coverage purchased: External intrusions only	
Policy limits:	
Coverage A. Computer theft	**$500,000 per occurrence**
Coverage B. Damage to data or software	**$500,000 per occurrence**
Coverage C. Business interruption	**$10,000,000 per occurrence**
Deductible: $1,000	
Approximate annual policy premium: $16,000	

Source: Cigna Property & Casualty, Philadelphia

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Vendors gear up for Internet World

▸ *Standards, commerce among hot topics*

By Carol Sliwa and Sharon Machlis

THE PUSH for standards compliance — in browsers, electronic commerce and Java — will be a hot topic this week at Internet World Fall '98 in New York.

The Web Standards Project, a 4,200-member grassroots group launched in August, and The Open Group, a 200-member industry consortium, will announce that they will develop test suites to determine whether browsers comply with various World Wide Web Consortium standards, officials said.

A test suite is now available for Hypertext Markup Language 3.2, and extending coverage to HTML 4.0 and Cascading Style Sheets Level 1 is "fairly urgent," said James de Raeve, the U.K.-based director of testing for The Open Group.

Lack of support for standards has been a nagging problem for Web developers, who have to do extra work to get their Web pages to display and function correctly in different browsers and on different platforms.

A Web Standards Project official said extra testing and workarounds needed to deal with the current "patchwork" support for standards adds 25% to the cost of developing sites.

On another front, two major entertainment and educational Internet sites on Tuesday are expected to announce that they will begin using Secure Electronic Transaction (SET) technology on their Web sites. Backed by Visa International Services Association and MasterCard International, Inc., SET has been in the works for more than two years but has yet to be used in a large U.S. consumer Web site.

> Lack of support for standards has been a nagging problem for Web developers.

SET is aimed at increasing Web security by using digital certificates to verify the identity of shoppers and giving merchants credit-card authorization but not credit-card numbers (which go through a bank or other clearinghouse).

VeriFone, Inc. in Redwood City, Calif., said two Web sites that it declined to name will implement its VPOS system, which includes SET 1.0 as well as the commonly used Secure Sockets Layer encryption.

Also this week, IBM plans to announce that it will collaborate with Java programming language creator **Sun Microsystems, Inc.** to forward the cause of multimedia and electronic commerce. Also, **Microsoft Corp.** will make a standards announcement related to Web infrastructure. Neither company would provide details.

PRODUCT SPOTLIGHT

Other highlights of Internet World include the following:

- **Open Market, Inc.** in Burlington, Mass., will announce transaction capabilities for its ShopSite electronic-store-building software. ShopSite TX was designed to let major companies such as banks, telecommunications firms and Internet service providers offer complete electronic-commerce services to their customers. Pricing starts at $5,000 for a system that runs on Sun's Solaris platform.
- **Computer Associates International, Inc.** in Islandia, N.Y., will announce MasterIT, a product that will let companies do real-time monitoring of the availability and performance of their World Wide Web servers — whether they are running on Windows NT or Unix, or are made by Netscape Communications Corp., Microsoft, Sun or the Apache Project — from a single point. The workgroup edition for small and midsize businesses will cost $695, and prices for the enterprise edition will start at $1,300. The product will ship by year's end.
- **Motorola, Inc.** in Schaumburg, Ill., will demonstrate technology that lets people access Internet or intranet content with just a telephone. Its VoxML Voice Markup Language lets programmers develop applications that make Web content available via voice recognition.
- **Art Technology Group** in Boston plans to unveil its Dynamo Relationship Commerce Suite that can help companies display personalized pages to customers based on rules they set up themselves. Due later this year, the product will cost $10,000 to $60,000 per CPU. □

Web summit to address privacy, user confidence

By Sharon Machlis

PRIVACY ISSUES are expected to take center stage this week in Ottawa when government, industry and consumer representatives from more than 40 countries meet at an Organisation for Economic Co-operation and Development (OECD) ministerial summit on the topic of the Internet.

Meanwhile, at Internet World Fall '98 in New York, executives from Internet heavy hitters such as Microsoft Corp., America Online, Inc., Netscape Communications Corp., Excite, Inc. and Yahoo, Inc. have scheduled an announcement on Wednesday about a "major Internet privacy initiative."

It is expected to be a consumer education and awareness campaign.

Participants were mum on details, except to say the effort will be under the umbrella of Truste, a nonprofit industry organization in Palo Alto, Calif., aimed at boosting consumer confidence on the World Wide Web. Truste members pledge to follow certain privacy practices and can then display the group's seal on their Web sites.

Internet industry officials in the U.S. have been working to convince an increasingly skeptical federal government that self-regulation will protect consumer privacy on the Web. Privacy advocates say U.S. policy is substantially weaker than in most Western countries.

Canada is expected to unveil a major privacy policy during the OECD conference. Also in Ottawa, the Global Internet Liberty Campaign (*www.gilc.org*) will hold a one-day workshop on the public's role in developing Internet policy, co-sponsored by groups such as the Electronic Privacy Information Center in Washington.

The full OECD conference sessions will be Webcast at *www.ottawaoecdconference.com/english/homepage.html*. □

Compaq to reassure Digital users at DECUS

By Jaikumar Vijayan

COMPAQ COMPUTER CORP. is expected to use this week's Digital Equipment Computer Users Society (DECUS) conference in Los Angeles to hammer home its commitment to core Digital technologies, while showing off its own.

The show marks the first time that Compaq has had a chance to meet a wide cross section of Digital's North American users since it acquired Digital Equipment Corp. in May.

"We are looking forward to it," said Tony Loele, president of DECUS and CEO of I/G Enterprises, an engineering consulting firm in Westchester, Pa. "Quite frankly, the customer base is a little apprehensive with regards to technologies like OpenVMS, Digital Unix and Alpha."

Compaq is expected to use the show to "make some very clear and precise statements" about those technologies and how they will be positioned against Compaq's own products, Loele said.

Creating the right impression is going to be crucial for Houston-based Compaq. Despite the relatively meager market share of Digital technologies such as Alpha, OpenVMS and Digital Unix, its users are represented in an influential cross section of manufacturers, banks and universities.

Ever since the Digital takeover, Compaq has been trying to quell user unease about the fate of technologies the company has acquired from Tandem Computers, Inc. and Digital. In June, Compaq Vice President Enrico Pesatori pledged that the company would continue to develop technologies such as OpenVMS, Alpha and Tandem's NonStop Kernel operating environment [CW, June 22].

Compaq recently reversed a decision — set in motion by Digital — to stop supporting OpenVMS workstations after 2000 after an outcry by VMS desktop users [CW, July 20].

"I am hoping to see some solid, if early, rollout plans for products and services around Alpha and built by Compaq," said Joseph Pollizzi, deputy head of the Space Telescope Science Institute in Baltimore.

The organization is in the market for new products and is looking for a reason to buy from Compaq, Pollizzi said.

LOOKING FOR THE MEAT

"I want to see some meat. Thus far, other than hearing some good words, I've not seen any product plans or what the actual rollout strategy is going to be" around Alpha, Pollizzi said.

Compaq's agenda at DECUS includes plans to address those issues. High on the list will be the official release of the so-called Galaxy Software Architecture for OpenVMS.

The technology lets users increase scalability of OpenVMS servers and will be available as an option with OpenVMS Version 7.2, which Compaq also will announce at DECUS. □

& Compaq releases the Galaxy architecture for OpenVMS. Page 53

Corrections

A Sept. 28 Software section story, "Drug maker simplifies deals," misidentified the company at which Kevin O'Rourke is chief information officer. He is at Sanofi, Inc. Also, in the same story, the name of a software maker was misspelled. It is Systems Consulting Co.

A Sept. 28 Enterprise Network section story, "E-mail filter speeds job placement," misstated the price of an E-mail filtering service from Infoworks, Inc. A subscription to Infoworks costs $7,500 per year, but the InfoAgent service is free.

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MCI service handles corporate calls

▸ *Nonlocal network trims voice, data expenses*

By Matt Hamblen

MCI WORLDCOM, INC. launched a communications service last week that could help companies cut 20% from monthly voice and data network costs by eliminating local carrier connections, analysts said.

The new On-Net service lets a business make calls and data connections over a network operated by MCI WorldCom in 81 major U.S. markets and 50 international locations, mainly in Europe.

By using spare capacity in its existing networks and bringing voice and data lines to a company's door, MCI WorldCom estimates it can handle 85% of U.S.-based business calls without the need for a local carrier. The Jackson, Miss.-based company said it will set up service with a local carrier in areas it doesn't reach in the U.S. The company also will seek local carriers to cover service gaps in other nations.

By cutting out the regional Bells and the public carriers abroad, a company can "get 10% savings in its sleep," said Berge Ayvazian, an analyst at The Yankee Group in Boston. A company saves more than 30% when it uses On-Net and makes network connections to a trading partner or supplier that also uses On-Net, Ayvazian and other analysts said.

On-Net "is exactly consistent with what our clients have cried for for years — to get rid of their local carriers," said Ken McGee, an analyst at Gartner Group, Inc. in Stamford, Conn. Analysts said the merger of MCI and WorldCom put the new entity ahead of rivals Sprint Corp. and AT&T Corp.

Great-West Life & Annuity Insurance Co. in Denver, an employee benefits and financial services company, has also signed up. It will reach 90% of its 93 remote offices in the U.S. with On-Net, said Graham McDonald, vice president of corporate finance. Great-West expects to save 25% off existing local exchange rate costs. "I think it could simplify the vendor partnership and solve problems faster," McDonald said.

J. D. Edwards & Co. in Denver also recently signed up for On-Net. "We've just started looking at the opportunities for cost savings, but we are already getting a 30% to 35% savings on the total bill where we have MCI local service," said vice president and CIO Mark Endry. Software maker J. D. Edwards has more than 6,500 customer sites in 104 countries.

Working abroad with the public carriers was costly and time-consuming, but now the company can consolidate its services with one carrier, Endry said.

Bill Dyer, director of information systems at Cincom Systems, Inc. in Cincinnati, said he is interested in finding out more about On-Net. With 50 offices abroad, Cincom would benefit from cutting out local carriers in foreign countries, he said. □

Estimated costs for voice calls with On-Net

Using local carriers	6 to 7 cents per minute
Company using On-Net to call branch offices or partners who use On-Net	4 to 5 cents per minute

Source: Gartner Group, Inc., Stamford, Conn.

Telcos, 'net providers to offer outsourced messaging

By Roberta Fusaro

SEVERAL VENDORS used last week's ISPCon show to launch messaging products aimed at letting Internet providers and telecommunications companies provide outsourced mail services to corporate users.

Mountain View, Calif.-based Netscape Communications Corp. unveiled its next-generation Messaging Server 4.0 Hosting Edition, messaging server software and accompanying E-mail and administration products. Software.com in Santa Clara, Calif., in the past few weeks has entered into pacts with several Internet providers that will use its InterMail messaging software. And Sun Microsystems, Inc. recently announced Version 3.5 of its Sun Internet Mail Server software.

All are aimed at paving the way to outsourced E-mail systems. But how close are large companies to doing that?

Not very, said Sara Radicati, president of The Radicati Group, Inc., a Palo Alto, Calif.-based technology marketing and research firm.

According to a messaging cost-of-ownership study conducted last year by Radicati, only 5% of large corporations — companies with more than 5,000 employees — are outsourcing their messaging systems. And all of the 100 Fortune 500 companies polled said they have multiple mail systems in place. Radicati said some companies are mixing outsourced mail, accessed via the Internet, and proprietary packages such as Lotus Notes, Microsoft Corp.'s Exchange and Novell, Inc.'s GroupWise. But very few are outsourcing the whole deal.

J. A. "Chip" Hernandez, vice president of infrastructure at Key Services Corp., the technology arm of KeyCorp Co. in Cleveland, said the financial institution had considered outsourcing its messaging but feared it wouldn't get the same security, responsiveness and collaborative features its Notes software provides.

"We've always had a healthy environment with Notes and the staff to support it," he said.

BC Tel Interactive, a subsidiary of telecommunications firm BC Telecom, Inc. in Vancouver, British Columbia, said recently it will roll out by early December an outsourced messaging service based on Sun Internet Mail Server (SIMS).

The service will offer basic E-mail store-and-forward services to companies with 50 or fewer workers. The service provider also may implement unified messaging — or the ability to pick up fax, E-mail and voice mail from one box — on top of the SIMS platform. □

OUTSOURCING E-MAIL

Most companies use a mix of packaged software and Internet mail. The following is a breakdown of companies that outsource some of their messaging:

Large companies (5,000+ employees)	5%
Midsize companies (1,000 to 5,000 employees)	40%
Small companies (less than 1,000 employees)	90%

Base: 100 Fortune 500 companies

Source: 1997 messaging study from The Radicati Group, Inc., Palo Alto, Calif.

Interest grows in desktop outsourcing

By April Jacobs

DO YOU HAVE staffing, training or support woes in your desktop systems department? Then you may be one of many corporate users expected to turn to desktop outsourcing in the next few years.

The market is hot right now and getting hotter. Desktop outsourcing contracts in the U.S. are expected to reach $4.4 billion by the end of this year — then nearly double to $8.22 billion by 2002, according to a report released last week by Framingham, Mass.-based International Data Corp. (IDC), a sister company to *Computerworld*. Desktop outsourcing includes basic asset management, such as tracking PCs and their applications, as well as support, maintenance and help-desk services.

The reasons why corporations farm out those tasks vary. But Doug Chandler, a senior analyst at IDC and primary author of the new report, said the top reasons include the following:

- The need to free up highly paid staff to perform more technical or core business functions.
- The difficulty of keeping a dedicated, trained staff for desktop systems.
- The lack of resources to develop an asset management program.

NASA, for example, plans to award desktop outsourcing contracts totaling an estimated $1 billion to $2 billion over the next nine years.

The goals are to get a handle on just how much its 70,000 desktops are costing the agency and free up scientists and engineers currently doing desktop computer support, said Don Andreotta, deputy chief information officer at NASA in Washington.

NASA also hopes to identify costs savings. But, like other users, it has had a hard time calculating the total cost of desktop ownership [CW, Sept. 14].

However, Andreotta said one thing is certain: Buying the hardware accounts for only about one-tenth of the total cost of the desktop system's life span.

By hiring a company with expertise in the area of asset management, NASA and others hope to identify and reduce some of the noncapital-based costs associated with desktop ownership. Stamford, Conn.-based Gartner Group, Inc. estimates soft costs can account for up to 60% of the total cost of ownership.

Companies are also turning to outsourcers because of what they view as the headache of keeping an internally trained staff current on a range of platforms.

At Dunlop Tire Co. in Amherst, N.Y., outsourcing provides the staff and support needed to manage LANs and WANs desktops and Notes applications. The company's internal staff handles databases and Unix-based systems.

"The best thing about having an outsourcer is that you know the staff the outsourcer will place on board has the right training and skills to work with the products you have," said Hugh Allan, manager of information technology at Dunlop. □

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NT version of Teradata finally on the way

By Stewart Deck

IT TOOK THREE years to do it, but the maker of the well-known, high-end Teradata database is bringing out a Windows NT version.

NCR Corp. will detail the long-awaited availability of its Teradata NT version at this week's annual User Group Conference in San Diego. NCR also will announce a new channel-sales strategy.

Users applaud porting the database to Microsoft Corp.'s Windows NT for the future flexibility it provides.

"I think porting to NT is a great thing," said Joe Bruscato, chief architect for data warehousing at Anthem Blue Cross Blue Shield, Inc. in Indianapolis. "As we talk about NT in our future, this certainly gives us more possibilities to talk about."

Archie Dayton, a Teradata user and technical project leader at The Coca-Cola Co. in Atlanta, said an NT version gives NCR a single database system from the lower end to the high end. Making Teradata available on Windows NT will move it from "niche-market status" to posing a challenge to mighty Oracle Corp., Dayton said.

Analysts agreed it was a good move. "With Teradata [for NT], NCR is making something available on NT that is well-known, well-understood and enterprise-proven," said Brian Murphy at Meta Group, Inc. in Stamford, Conn.

Customers have been urging NCR to come out with a Windows NT version since 1995, when the company released a Unix version, said Randy Lea, assistant vice president for Teradata marketing at NCR.

Lea said it took the company that long to put together a Teradata NT version because NCR concentrated too long on developing a version for the Unix operating system being developed by Hewlett-Packard Co. and The Santa Cruz Operation, Inc.

"As time went on, it became evident that this Unix variant wasn't going to be a standard," Lea said. "And we saw NT gaining ground and support, so we started working on an NT version."

Tony Marshall — another Teradata user and a decision-support specialist at Hallmark Cards, Inc. in Kansas City, Mo. — said his company would be interested in using an NT version. As the Microsoft's NT operating system "becomes more scalable and because it's affordable . . . we'll have an opportunity to use it as a test database," Marshall said.

SEEKING THE MIDDLE

Channel sales and marketing also are new territory for NCR, as it strives to make gains among midsize companies. To do this, NCR will partner with global and regional systems integrators and resellers for sales and product support.

Later this month, the company is expected to announce that, for the first time, users will be able to access its database using non-NCR hardware. NCR is partnering with Dell Computer Corp., Compaq Computer Corp. and HP.

Choosing partners shows that NCR "is now in step with the middle market" and the way these companies purchase information technology, said Ed Schaider, an analyst at The Standish Group International, Inc., a Dennis, Mass.-based consultancy. □

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FRANKLY SPEAKING

Y2K reboot: No shortcut

FRANK HAYES

WHOOPS! Anyone who thinks shutting down information systems on New Year's Eve 1999 and then restarting them after midnight is a year 2000 fix needs to reboot something more than computers.

That's *not* what I was suggesting in last week's column ["The year 2000 reboot," CW, Sept. 28]. But at least one thoughtful reader got that impression.

"I was concerned with the roulette wheel approach to solving this problem," he wrote. "Anybody addressing the issue by a reboot at the year 2000 rollover is likely to be a day late and a dollar short. I do not personally believe in the [Test In Production] theory of business practice. Issues of how to test the systems and applications need to be addressed now so that these tests can be set up before the infamous hour."

Absolutely. Any IS shops that put off year 2000 fixes and testing in hopes that their systems can all be patched up the morning after — well, that isn't a roulette wheel they're playing at. It's Russian roulette — with all the chambers loaded.

Shutting down your systems at midnight on Dec. 31, 1999, is one more small step toward reducing your year 2000 risks. It isn't a fix in itself — it just helps you dodge some once-in-a-lifetime factors outside your control, such as power disruptions and software or hardware glitches that will strike only at zero hour.

A New Year's Eve reboot will protect you from just one small group of dangers.

It's no replacement for a full-blown search-and-destroy operation aimed at year 2000 problems. If you haven't already planned your attack, inventoried your systems and started to correct your millennial bugs and to test your fixes, you're very late to the battle.

That's how you'll eliminate the major year 2000 risks to your business. A New Year's Eve reboot will protect you from just one small group of additional dangers. Even then, you can't just turn systems off and back on — you need a plan, complete with testing, operational procedures and even training and rehearsals for the big night.

And your year 2000 job doesn't stop there. The business realities extend far beyond your IS shop — but they're still on your plate.

What about your users? Have they been trained in any new or modified applications and procedures? Have you included them in your year 2000 plans — with an emphasis on communication, early and often?

Don't forget your business partners, the suppliers and customers who exchange data with you. If their year 2000 fixes don't align with yours — because they've changed data formats, applications or equipment — you don't want to find out at the last minute. You need lots of technical information exchanges and joint testing as soon as possible.

But even that may not cover the full impact of year 2000 changes. What if they change procedures or systems as part of their fixes? That could require tweaks to *your* business processes, especially if customers order products on a different schedule or suppliers change the way their goods are delivered.

And because your top executives probably still think the year 2000 fix is just an IS project, you also have to make them see exactly how it reaches into every aspect of your business. That may be the toughest part of the job because it's a message they really won't want to hear.

Nope, a zero-hour reboot is no one-night year 2000 fix. And anyone who doesn't understand that IS is at ground zero for the biggest *business* issue of the decade — well, maybe they *should* just turn their systems off on New Year's Eve 1999.

And leave them off. □

Hayes is Computerworld*'s staff columnist. His Internet address is frank_hayes@cw.com.*

SHORTS

Lotus lays off 45 workers

Cambridge, Mass.-based Lotus Development Corp., a subsidiary of IBM, last week laid off 45 employees as part of a restructuring. Including last week's actions, the company has eliminated about 170 jobs this year. The software vendor has approximately 8,500 employees worldwide. A spokesman, who noted that Lotus has added 1,000 workers to engineering and sales staffs, wouldn't specify which departments would be affected by the layoffs.

CONTRACT OF THE WEEK

Customer: The Boeing Co., Seattle
Prime contractor: IBM
Terms: $2 billion, 5 years
Highlights: IBM will consolidate numerous Boeing data centers — a hodgepodge resulting from recent mergers — into a single site in St. Louis.

IBM also will provide voice services and teleconferencing to all of Boeing and support distributed servers and desktop systems.

EDI vendor cuts staff 10%

Electronic commerce software and services vendor Harbinger Corp. said it would cut its workforce by 10% (about 110 people) and close two offices. The moves come as the Atlanta company said it expects to report a loss or break-even quarter. Harbinger founder and CEO C. Tycho Howle said year 2000 issues, enterprise resource planning implementations and confusion over technology have been casting a pall on the pure Electronic Data Interchange portion of the electronic commerce market.

Help for year 2000 disclosures

Software Testing Assurance Corp. (STAC) in Stamford, Conn., recently announced a software and certification process to help companies prepare the year 2000 disclosure documents they must present to the Securities and Exchange Commission. The World Wide Web-based software lets corporations perform a self-assessment and then use STAC-trained certification assessors to complete the verification process in a secure setting. Pricing wasn't announced.

Symantec gets virus know-how

Symantec Corp. has purchased Intel Corp.'s antivirus business and licensed some systems management technology for an undisclosed sum. Symantec will blend its Norton AntiVirus technology with some new Intel tools and integrate the whole package with Intel's LANDesk Management Suite. In a separate, cost-cutting move, Symantec, in Cupertino, Calif., said it would cut about 100 jobs, or 5% of its workforce.

$30M health care outsourcing

Atlanta-based Vanstar Corp. will roll out more than 10,000 PCs and peripherals and provide consulting and integration services to Sun Healthcare Group, Inc. under a $30 million contract announced last week. The agreement comes in the wake of the Albuquerque, N.M., health care company's rapid expansion, which includes the recent acquisition of Republic Homes, a chain of assisted-living facilities.

Marquette outsources support

Minneapolis-based Marquette Banks NA last week hired 800 Support in Portland, Ore., to staff the help desk for online and home banking customers in 10 states. The outsourcing deal involves support for On-Line Banking, a service that lets bank customers check account balances, transfer funds, pay bills and manage money using Intuit Quicken or Microsoft Money. In the past, Marquette directed technical support questions to Intuit, Inc. and Microsoft Corp. Terms of the deal weren't disclosed.

Brokerage ceases trading

Block Trading, a Houston-based brokerage firm that offered "day trading" capabilities to individual investors through sophisticated software it had developed [CW, July 27, 1997], was forced to close shop last week after it ran out of money. Firms such as Block Trading are known as SOES bandits, so-named for Nasdaq Stock Market, Inc.'s Small Order Execution System, which provides individual investors the "bid" and "ask" prices of a stock as offered by market makers.

SHORT TAKES The U.S. government extended **Network Solutions, Inc.**'s contract to register domains until Wednesday while the two parties finalize a transitional "ramp-down" contract. ... **Netscape Communications Corp.**'s chief scientist, Taher Elgamal, known for his encryption work, has left the Mountain View, Calif., software maker to start a network security company called **Securify, Inc.** ... **Netscape** expects to release a fix by midmonth for a potential security flaw that can let outsiders view the uniform resource locators stored in its browser's cache, said Rosanne Siino, vice president of corporate communications. In the meantime, users can set their browser preferences to clear the cache, she said. ... In the groupware market, **Microsoft** added more users than **Lotus Notes/Domino** in the first half of this year, according to International Data Corp.

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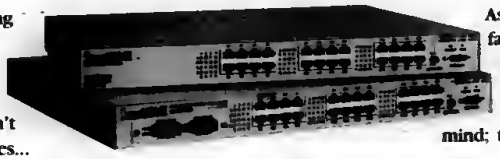

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CABLETRON SYSTEMS

Banc One signs up for IT aid

▸ Merger, E-commerce move may create net operations overload

By Matt Hamblen and Patrick Thibodeau

BANC ONE CORP. last week joined other large banks in outsourcing support for its network and computing infrastructure.

The bank's move to outside support seems to arise from a pending merger and a probable move to electronic commerce, which will create more information technology work than Banc One could handle itself, analysts said.

The Columbus, Ohio-based bank announced it had signed $1.8 billion in contracts with IBM Global Solutions and AT&T Solutions to build its network and computing infrastructure over several years.

As the deal was announced, so was a possible sale of the IBM unit to AT&T. An AT&T official said the company was among those in preliminary talks to acquire the $4 billion global network operation, which has been rumored for several weeks to be up for sale (CW, Sept. 7).

BANC ONE CORP

Headquarters: Columbus, Ohio

Assets: $124 billion; will climb to $240 billion after merger this month with First Chicago NBD Corp., making it the nation's fifth-largest bank

Branches: 1,500 in 12 states

Analysts said that if IBM sells the network to AT&T, there likely would be some impact on the three-party bank alliance because IBM Global Solutions manages the global network.

Under the Banc One deal, AT&T Solutions will get $1.4 billion over six years to manage the bank's voice and data networking and build an Internet Protocol-based networking platform. IBM is to receive $420 million over seven years to manage most of the bank's data center operations, including help desk support and mainframe and midrange server management. About 550 bank workers will be transferred to either IBM or AT&T but actually will work for the partnership, called The Technology One Alliance. IBM and AT&T will set up separate training centers in the Columbus area.

Many companies are expanding at a rate that is outpacing the capabilities of their networks.

"We think it is extremely important to our future to have a best-in-class infrastructure that enables us to deliver products to the marketplace faster than our competition," said Marv Adams, chief technology officer at Banc One. Adams said many applications for consumers and business customers will be built atop the new network, but he wouldn't elaborate.

By establishing IP as the protocol for its networks in the deal, Banc One is clearly setting the stage for a move into electronic commerce, said Bill Bradway, an analyst at Meridien Research, Inc., a Newton, Mass.-based financial services research firm.

But Banc One's main motivation for outsourcing may have more to do with its acquisition strategy, Bradway said.

The bank is merging with First Chicago NBD Corp. After the merger is completed sometime this month, Banc One's assets will rise from $159 billion to $240 billion, making it the nation's fifth-largest bank.

JOIN THE CROWD

Other large banks have outsourced networking and computing needs, including the $2 billion Pinnacle Alliance formed in 1996 by J. P. Morgan & Co. and partners AT&T, Computer Sciences Corp., Andersen Consulting and Bell Atlantic Corp. A year ago, the vendors said they had hit their 15% annual cost savings targets (CW, June 30, 1997).

The Banc One deal "should finally place networking outsourcing as something viable to consider and something safe to use," said Ken McGee, an analyst at Gartner Group, Inc. in Stamford, Conn. In effect, "the bank has said to these two companies, 'Take over the management of our pacemaker; we trust you,'" McGee said.

He said many companies are expanding and diversifying at a rate that is outpacing the capabilities of their networks. He estimates that there may be 2 million full-time application developers working at user companies, but just 150,000 networking professionals — far short of what is needed. □

THE ASSOCIATED PRESS

Georges' rains flooded Gulf Coast IS staffs with trouble

Preparation helps IT staffs ride out Georges

By Thomas Hoffman

EVACUATION MEASURES from Florida to Louisiana created logistical and staffing headaches for IS and operations managers who tried valiantly last week to keep their businesses running while Hurricane Georges dumped 25 inches of rain on parts of the Gulf Coast.

Because of the intensity of the storm, which saw wind gusts in excess of 150 miles per hour, many residents along the Gulf Coast were forced to evacuate their communities. That led to widespread business shutdowns, which helps explain why Rosemont, Ill.-based recovery company Comdisco, Inc. had 17 customers declare disasters during the 12-day storm, the most since the Chicago floods in April 1992.

EVACUATION

Pride International, Inc., a $1 billion oil drilling contractor, had to evacuate its office in Houma, La., "and get our guys off the rigs" in the Gulf of Mexico before the storm hit early Monday morning, said Yvonne Donohoe, chief information officer at the Houston-based firm.

The exercise "was a bit of a planning and coordination effort," said Donohoe, who began fielding calls at her home the previous weekend.

Heavy flooding was expected in Houma, southwest of New Orleans, so Pride shut down its computer operations there and removed its Hewlett-Packard Co. HP 9000 servers for safekeeping, Donohoe said.

Georges did flood Houma roads, but not Pride's offices. So the 10 information systems staffers there were able to reinstall the HP machines Tuesday and resume operations on Wednesday, she said.

Degussa Corp., a Ridgefield, N.J.-based chemical company, survived Georges, even though a curfew in flood-stricken Theodore, Ala., prevented the company's IS staff from traveling to its data center there. But the company's IBM AS/400 kept humming because employees monitored the company's systems from their homes using remote access software on their laptop computers, said Joe Gowder, director of operations and technology at Degussa.

"We can't load tapes or print files, but we can monitor everything" remotely, Gowder said.

The same couldn't be said for the 16 manufacturing plants located on the same campus, which had to shut down for 24 hours. The plant, which runs 24 hours per day, seven days per week, "is expensive to shut down," Gowder said. "It's really big money, man." Gowder hopped a plane to take two backup tapes to an IBM disaster recovery facility in Sterling Forest, N.Y. — just in case the Degussa data center lost power, which it didn't.

The data center, which supports other Degussa manufacturing plants and offices around the U.S., is secured from water and wind damage, Gowder said. □

& Gulfstream Aerospace has prepared for six hurricane watches in four years. Page 41

IBM bundles consulting, net insurance

By Patrick Thibodeau

IBM AND London-based insurer Sedgwick Group PLC are offering a joint consulting and insurance package that covers network breaches caused by attacks.

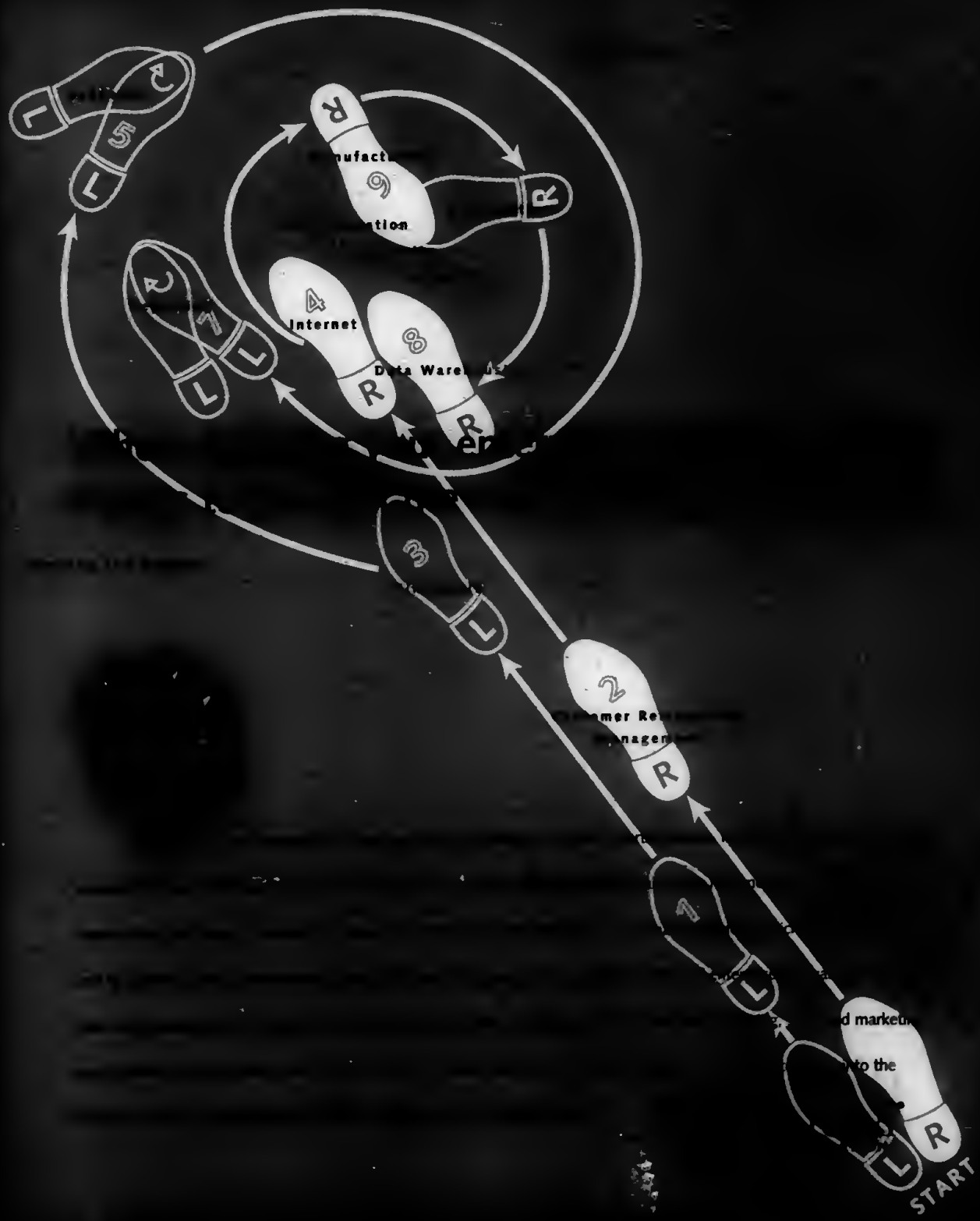
Under the plan, IBM this month will provide customers with security assessments and help set up systems to prevent network intrusions. Sedgwick will offer insurance that covers security breaches, such as denial of service, network hacks or electronic theft. For instance, if a hacker attack brings down a network, the insured firm can file a claim.

IBM said its offering is unique, but many companies may already have insurance coverage that protects them from losses caused by hacker attacks.

Steve Koss, chief information officer at Oakland Alameda County Coliseum in California, said his organization's network is protected from hacker attacks and other problems under its loss-of-business insurance coverage. The stadium added a rider to its insurance coverage 10 years ago to protect its network, Koss said.

Companies aren't obligated to use IBM's consulting services; the insurance can be purchased separately. Standard coverage is being offered for $5 million to $15 million, but coverage as high as $50 million is also possible. □

& Insurers are starting to offer coverage for network security lapses. Page 4


Internet
START

Intel, Netscape investments boost Linux effort to become PC player

By Tom Diederich, David Orenstein and Stewart Deck

INTEL CORP., Netscape Communications Corp. and two venture capital firms bought a minority stake in Linux vendor Red Hat Software, Inc. last week. Their clout could help Linux, a free variant of Unix of which Red Hat sells a commercial version, become an established PC operating system.

PC makers will need to begin shipping computers with Linux, a graphic interface and some basic productivity software if Linux is going to take off with more mainstream users, said Andrew Allison, an independent industry analyst in Carmel, Calif. Intel's investment will help persuade them to do that, he said.

On the software side, he said, Corel Corp. is close to providing the productivity software. Other vendors such as Oracle Corp. can further advance the "productization" of Linux to make it a productive environment in the enterprise, Allison said.

Allison said Linux is three or more years away from being an enterprise-class server — but then, so is Microsoft Corp.'s Windows NT.

OPERATING SYSTEMS

It is exactly that server market that Red Hat is interested in, said Red Hat President Bob Young.

With the new funds, Young said the company was creating an Enterprise Computing Division that will aim Linux at enterprise applications. But "the partners we're bringing in on this deal are much more important than the money they are investing," he said.

The new support for Linux is great news to Andy Martin, chief technology officer at the Web-based Garden Escape, Inc. sales site in Austin, Texas. "If Linux continues to build this kind of momentum for the next year to 18 months, why would you not choose it?" he asked.

Intel's interest in Red Hat, based in Research Triangle Park, N.C., probably wasn't an effort to wage war against Microsoft's Windows operating systems, said Dave Jones, an analyst at the "California Technology Stock Letter" in Half Moon Bay, Calif.

"Intel invests in a lot of companies. . . . They buy lots of little things in hopes that some of them will pay off in one form or another. So they're seeding Red Hat and at the same time will be working just as hard as ever with Microsoft to define things going forward," Jones said.

Because Red Hat will remain a private, closely held company, Young said financial terms of the deal won't be disclosed.

The Red Hat moves are the latest in a series of efforts by several major companies to support the free Linux version of Unix [CW, Sept. 14, Aug. 31, Aug. 17]. □

Bills passed for 'net taxes, Y2K protection

By Matt Hamblen

BOTH CHAMBERS of Congress quickly and unanimously approved a bill last week reducing liability for companies that unintentionally give false information about the year 2000 bug.

Meanwhile, senators were expected to approve the Internet Tax Freedom Act, following a version that passed the House on June 23 calling for a three-year moratorium on new Internet taxes.

Both measures will go to President Clinton, who is expected to sign them.

The Year 2000 Information and Readiness Disclosure Act was a compromise version of one Clinton proposed in July through the President's Council on Year 2000 Conversion.

INFORMATION SHARING

In a statement, Clinton said the disclosure bill will help businesses, state and local governments and federal agencies "better address the year 2000 problem by providing limited liability protections to encourage greater information sharing about solutions. . . . Jan. 1, 2000, is one deadline we cannot push back," he said.

Supporters said the bill seemed assured of passage when a bipartisan group of lawmakers supported the compromise on Sept. 16, although some industry officials have opposed it for limiting liability on the grounds that it could cause some companies to be complacent about making year 2000 fixes [CW, Sept. 28].

A central goal of the Internet tax moratorium is to allow a commission three years to study the impact of Internet taxes, especially given fears that Main Street retailers that pay sales taxes could lose out to Internet commerce.

Another major concern of lawmakers is treating electronic commerce the same as other remote sales, such as those by phone and mail-order businesses, which generally avoid out-of-state taxes.

The Clinton administration doesn't oppose Internet taxes altogether but wants to develop a means of collecting them that is fair to other businesses and efficient. □

Hitachi enters server market

HITACHI PC CORP. is trying to make inroads into the corporate desktop and server market by leveraging its well-founded mainframe and mobile computing business.

The Milpitas, Calif., company last week announced an eight-processor Pentium II Xeon-based server, dubbed the VisionBase 8880R.

Hitachi also announced the Xeon-based VisionBase 8460 line (which has one-, two- and three-processor models) and a dual-processor Pentium II-based server, the 8240.

The jump into the Intel-based server market is part of Hitachi's effort to offer customers a one-stop-shop plan, said Amir Ahari, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*.

— April Jacobs

Microsoft's antitrust docket

CASE	STATUS
Bristol Technology	No trial date set, but a hearing on Bristol's motion for a preliminary injunction is tentatively slated for Oct. 13 or 14
U.S. and 20 states	Trial to start Oct. 15
Caldera	Trial to start June 7, 1999

Microsoft besieged by three antitrust suits

By Kim S. Nash

MICROSOFT CORP. lawyers were in several hot seats last week in bouts related to the three antitrust cases being waged against the company.

In the antitrust suit filed by the U.S. Department of Justice and 20 states, Microsoft hit a couple of snags in collecting evidence for its defense.

First, although a judge ordered Oracle Corp. to turn over documentation on partnership agreements to Microsoft, he drew the line at other documents and memos related to meetings Oracle had with vendors such as Sun Microsystems, Inc., as Microsoft had requested.

AUTHORS SUBPOENAED

Separately, two college professors writing a book on Netscape Communications Corp.'s business problems challenged a subpoena from Microsoft, which asked them to turn over documents and tapes of interviews with Netscape executives.

Responding to Microsoft's subpoena would mean breaking confidentiality agreements signed with the Netscape employees, said Michael Cusumano, a business professor at MIT in Cambridge, Mass. He wrote the book on Netscape, due this month, with David Yoffie at Harvard University.

Meanwhile, Caldera, Inc., a 4-year-old software company in Orem, Utah, known mainly for Linux products, won access to a deposition that is potentially damaging to Microsoft.

The deposition — taken by U.S. government lawyers from a former Microsoft sales manager in Germany — is said to contain references to Microsoft officials destroying evidence related to the vendor's competitive tactics in the DOS market.

The statement, made by Stefanie Reichel, was taken during an antitrust investigation of Microsoft in the early 1990s. Caldera, which owns the DR-DOS operating system, has accused Microsoft of using illegal, anticompetitive acts in promoting its MS-DOS rival product.

Caldera had done its own deposition of Reichel in August but wanted to supplement its evidence-gathering with material from her earlier statement.

Ronald Boyce, the magistrate overseeing the case, wouldn't allow the material to be made public. But he granted Caldera permission to use the information, said Bryan Sparks, Caldera's president and CEO.

Microsoft then filed papers accusing Caldera of contempt for allegedly making public sealed information from the August Reichel deposition, Microsoft said. Caldera denied it.

Microsoft also lost a bid last Monday to delay the Caldera trial for four months; Boyce stood firm on the June 1999 date (see chart above).

Elsewhere, Microsoft filed a 56-page legal response to an antitrust suit brought in August by Bristol Technology, Inc., a tools maker in Danbury, Conn. [CW, Aug. 24].

Bristol has accused Microsoft of illegally cutting off access to key NT source code and application programming interfaces.

The suit also claims that Microsoft unfairly raised the price Bristol must pay for the related technology it needs to build its development tools. All of that, Bristol charged, was in an effort to interfere with competition in the operating systems market.

"This is a contractual dispute, not antitrust," countered a Microsoft spokesman last week. "Bristol is attempting to use the court to negotiate more favorable terms," he said. □

Patrick Thibodeau contributed to this report.

SEC watching books on high-tech mergers

By Stewart Deck

LAST WEEK'S settlement between America Online, Inc. and the Securities and Exchange Commission may be the start of an SEC campaign to tighten accounting standards for high-tech mergers and acquisitions.

In the settlement, Vienna, Va.-based America Online agreed to refigure how it accounted for the research and development assets it obtained when it bought NetChannel, Inc. and Mirabilis, Inc. earlier this year.

The SEC wants to stop companies from lumping the bulk of acquisition charges under the heading of "in-process research and development." Using that technique, acquisition costs can be written off immediately instead of being amortized over time, and firms can show profits faster.

SEC Chairman Arthur Levitt said in a speech last week that he is "concerned that the motivation to meet Wall Street earnings expectations may be overriding commonsense business practices."

Last month, the SEC's chief accountant said the practice of classifying acquisition costs as in-process R&D has "increased in magnitude and frequency" and undermines the public's confidence in financial statements.

America Online CEO Steve Case sounded conciliatory at a press conference last week. He said the SEC is now taking a "businessman's approach and trying to combine the accounting treatment for acquisitions with the economic value of the acquisitions."

Mark Nebergall, vice president for finance and tax policy at the Software Publishers Association (SPA) in New York, downplayed the SEC's recent moves. The SEC will continue to allow merger costs to be written off as R&D, "but they will more closely scrutinize the valuations placed on those charges," he said.

But one analyst said the settlement is part of a dramatic shift.

"I think the SPA is whistling past the graveyard here," said Ulric Weil, an analyst at Friedman, Billings, Ramsey & Co. in Arlington, Va. The settlement indicates that "the days of easy write-offs of acquired R&D have come to an end," he said. □

Strapped IS shops applaud House nod to H-1B quota boost

By Barb Cole-Gomolski

COMPANIES THAT recruit information technology workers from abroad applauded the U.S. House of Representatives' recent approval of a bill that boosts the number of visas granted each year to foreigners.

Even though the bill creates more red tape and imposes a $500-per-visa fee, staffing managers said it's worth it. The Senate is expected to vote on the compromise bill soon, and President Clinton is expected to sign it.

"We've fallen behind on some consulting assignments because we were unable to bring workers over as planned," said Todd Kijauskas, director of recruiting at the Cleveland office of systems integrator Whittman-Hart, Inc.

The 65,000 annual cap on H-1B visas was reached in May, preventing firms from hiring more foreign IT workers.

Under the bill, the H-1B quota will be 115,000 for both next year and 2000 and 107,500 in 2001, resulting in about 140,000 extra visas. The visas are shared among a variety of fields, including law, medicine and IT.

"For most companies, this is good news because the cap has been raised," said Marc Yelnick, an immigration attorney in San Mateo, Calif. □

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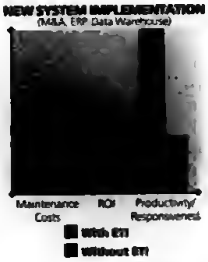

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Cases highlight need for E-mail policies

By Roberta Fusaro

THE E-MAIL trails that gave prosecutors in the Monica Lewinsky and Microsoft cases such rich fodder are a stark reminder that old E-mail can come back to haunt the sender.

In the past month, Seattle-based Computer Forensics, Inc., which helps lawyers recover and analyze electronic evidence, has seen a 75% increase in the number of calls from businesses seeking consulting services, said Joan Feldman, president of the company.

She attributed that to the high-profile role E-mail has played in the headline-grabbing Microsoft Corp antitrust case and the White House scandal involving intern Monica S Lewinsky

For example, antitrust investigators uncovered E-mail from a Microsoft executive that said Windows "must be a killer on OEM shipments so that Netscape [Communications Corp.] never gets a chance on these systems" [CW, Aug. 17].

And independent counsel Kenneth Starr collected numerous E-mail messages in which Lewinsky discussed intimate details about her meetings with President Clinton.

Many companies have document-retention policies for hard-copy documents, but they haven't applied those policies to electronic documents, said Michael R. Overly, an attorney at Foley & Lardner, a law firm in San Francisco, and author of *E-Policy*, an E-mail usage guideline.

Because E-mail isn't taking up physical space, he said, business managers don't see it as a problem — until they get a standard litigation discovery request and end up spending thousands of dollars and thousands of hours looking for relevant evidence.

Overly estimated that 40% of U.S. corporations have policies in place to delete E-mail after 30, 60 or 90 days. "There is a real benefit to that, as long as you aren't running afoul of laws that prevent you from deleting that information," he said.

Feldman pointed out that E-mail discovery is costly on two levels. First, she said the process of reviewing and collecting E-mail from disparate tapes and databases usually costs at least $25,000. Second, the more E-mail that is stockpiled, the greater the odds that there will be damaging material that could lead to legal suits, she added.

The information systems department is often at the eye of the legal storm because it is considered the keeper of the E-mail files, experts said.

Theodore Banks, general counsel at Kraft Foods, Inc. in Northfield, Mich., said that because discovery requests now include E-mail, "it's important for companies to train their employees to understand that E-mail is a business document — that you should keep it only while you need it, destroy it when you don't and don't destroy it if you've been ordered by the court to retain those records." □

MORE ONLINE

For resources on E-mail policies, E-mail privacy and the legal issues surrounding E-mail as evidence, visit Computerworld online.

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Crises delay foreign Y2K fixes

CONTINUED FROM PAGE 1

a research fellow at Meta Group, Inc. in Stamford, Conn.

"We have a definite concern and exposure in [Asian] countries, and the lack of [regulatory] oversight in Asia has brought the banking system to its knees," said John Beran, chief information officer at Comerica, Inc., a Detroit-based bank.

To minimize any disruption from faulty data, Beran suggests that U.S. banks install filters to edit incoming data from international partners and customers.

Another contingency approach is to create a "buddy network" among major supply-chain partners and test one another's systems "to get early notice of their status," Rubin said.

U.S. companies with deep pockets and critical foreign suppliers also can send year 2000 project staffers to work on a partner's systems, said William Ulrich, president of Tactical Strategy Group, Inc. in Soquel, Calif., and a *Computerworld* columnist.

MORE ALTERNATIVES

Other options: Switch suppliers, buy out small but critical suppliers or just stop doing business in certain countries, as some of Ulrich's manufacturing and insurance clients are considering doing.

"If one country only represents 1% of revenues out of 36 countries, it may be more judicious to drop clients from that country and pull out altogether," Ulrich said.

Given the networked nature of world markets, there is no such thing as an "isolated" failure, testified William A. Bautz, chief technology officer at the New York Stock Exchange, at a U.S. Senate hearing in July.

In the finance sector, an international disruption in a key market "could prevent the settlement of trades or movement of cash and securities, which in turn could squeeze credit and liquidity," testified Peter A. Miller, CIO at New York-based J. P. Morgan & Co., at the same hearing.

Many foreign companies are trying to fix their year 2000 problems "on the cheap," observers said.

Economic problems "will absolutely have an effect" on the ability of foreign banks to execute year 2000 projects, said Mel Taub, CIO at Salomon Smith Barney, Inc. in New York.

The firm's joint venture with Nikko Securities Co. in Tokyo — to be launched in the first quarter of next year — will be year 2000-ready. "But I'm less confident about other [Asian] players," Taub said.

Asia "has a year 1998 problem," with many organizations just trying to stay in business for the remainder of the year, said Edward E. Yardeni, chief economist at Deutsche Bank Securities in New York.

Users said it has been especially hard to get reliable information on international year 2000 projects, but the following reports suggest why government and private-sector experts are alarmed:

- Two-thirds of the companies in Russia, China, India, Argentina and Venezuela are expected to have a mission-critical system failure in 2000, according to Gartner Group, Inc. in Cambridge, Mass.

Gartner, which surveys 15,000 companies in 87 countries every three months, reported on Aug. 5 that 23% of companies worldwide have yet to start dealing with year 2000 issues. That's an improvement over 50% last year.

- An Aug. 20 survey by the Tokyo Stock Exchange found that 81% of Japanese companies are working on the millennium problem, 9% are finished — and 6% said they had done nothing or saw no need to take action.
- The economic crisis in the Asia-Pacific region has pushed that region's spending on the year 2000 problem into next year, when 5.2% of information technology spending will be devoted to the millennium glitch, according to Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*.
- Surveys by Reuters and Merrill Lynch & Co. indicate that utilities in Indonesia, Pakistan, Malaysia and China are ill-prepared for year 2000.

Many foreign companies, faced with capital crises, are trying to fix their year 2000 problems "on the cheap," observers said. By U.S. standards, they have modest budgets and are hoping for free help from vendors, fellow users and governments. Sometimes they outsource the job to low-cost software factories in India.

Year 2000 project spending at non-U.S. companies is about 50% lower than the spending at peer companies in the U.S., Rubin said.

But some observers said the international situation isn't as bad as doomsayers suggest.

Mac Jeffery, a spokesman for IBM Asia Pacific in Tokyo, said the year 2000 situation in Asia is roughly similar to that of other regions: The laggards are generally small businesses, along with some scattered mid-size businesses.

STILL A PRIORITY

"Most large organizations — banks, for example — recognize that the Y2K problem is a priority, even in the face of current economic pressures," Jeffery said. "Even in China, which some outsiders speculate must be far behind, the government has initiated an extremely vigorous program to get government and industry ready."

Peter Walker, principal consultant at A. T. Kearney, Inc.'s strategic IT practice in Singapore, agreed that most Asian banks and certain countries, such as high-tech Singapore, are in relatively good shape.

But at the other end of the spectrum are Indonesia, Malaysia and Thailand.

Walker said those countries went into "doldrums mode" when the economic crises hit, which means decision-making in the organization slowed down and year 2000 fixes didn't get management attention.

"In different times, this could have been the No. 1 concern for the CEO. Today, because of the crash, it could be the No. 5 concern. The CEO is worried more about getting capital, markets, driving costs out of the system — and the year 2000 sits at the end of a long list," Walker said.

The result: "The IT department is reacting the best it can, rewriting code," Walker said.

"But the whole systems testing area, contingency planning, the interfaces to external parties — all of these issues are not really being looked at in great detail," he said. □

The sleeping bear

The millennium bug probably won't launch Russia's nuclear missiles on New Year's Day, 2000. Someone still has to push a button to do that. But U.S. Department of Defense officials are concerned about the prospect of an "unthinkable calamity" if Russian military screens go dark in 2000 and lead to misunderstandings.

To mitigate the risk, the U.S. is offering to share data from its nuclear early-warning systems with other nuclear powers, U.S. Deputy Secretary of Defense John Hamre testified at a Senate hearing in June. That data was top secret during the Cold War.

In the private sector, many Russian banks' assets were wiped out by the collapse of the ruble, leaving them on the verge of bankruptcy and placing their year 2000 activity "in a tactical holding pattern," said Trevor Gunn, who monitors the former Soviet states at the U.S. Department of Commerce in Washington. That could trigger year 2000 problems for U.S. banks that have links to Russian banks, he said. — Thomas Hoffman and Mitch Betts

YEAR 2000 DANGER ZONES AROUND THE WORLD

Sources: High-risk countries identified by Lee Mazzucchi, research director at Gartner Group, Inc., Stamford, Conn.; U.S. trading partners from U.S. Bureau of the Census data

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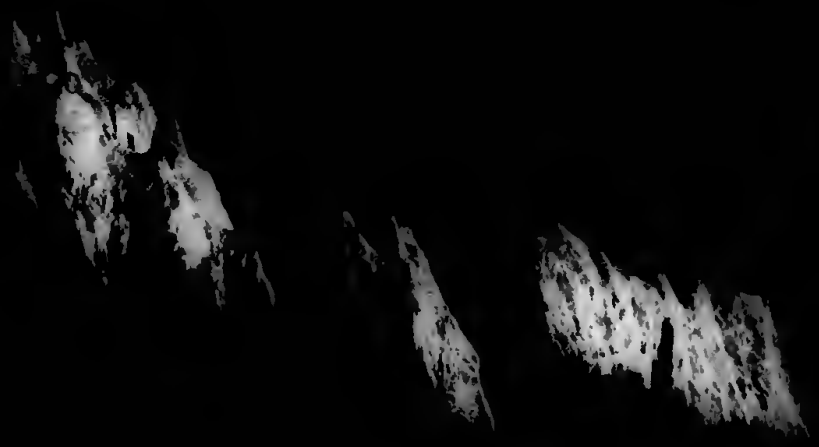

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U.S. companies await clear tax rules on the euro

By Thomas Hoffman
New York

WITH FEWER than 100 days before 11 European nations usher in a unified currency, U.S. companies with trans-Atlantic business ties still don't have clear federal tax rules about whether they should write off their systems conversion costs all at once or spread them out over time.

If it costs a bank, say, $30 million to modify its financial systems to recognize the euro currency, companies in an earnings or cash crunch "might want to spread that cost out over a few years rather than take a big, one-time hit against profits," said Sarwar A. Kashmeri, president of Niche Systems, Inc.

The New York-based financial systems consultancy hosted a Sept. 23 conference here on the topic of the U.S. business and political implications of the euro.

"It's a contentious issue on which many legal minds have differed," said Je Young Baik, an attorney at the U.S. Treasury Department's Office of International Tax Policy in Washington. Baik declined to say whether or when the Treasury Department planned to introduce euro-specific accounting rules.

"It's very open-ended right now. I'm not sure what to make of it."

– Walter D. Fenoglio, Texas Utilities

The accounting issue is a dilemma for many U.S. companies, which are expected to pony up an estimated $30 billion to cover euro conversion costs for their financial systems, Kashmeri said. Companies that spread out their euro conversion costs may open themselves up to being audited, he added.

So far, the Treasury Department has been advising U.S. companies to follow the revenue procedures it laid down in October 1997 for handling year 2000 conversion costs.

Those regulations require companies to expense their annual year 2000 project costs during the fiscal year the work is conducted.

CLEAR GUIDELINES NEEDED

Some executives said they want clear direction on which accounting approach to take. "It's very open-ended right now. I'm not sure what to make of it," said Walter D. Fenoglio, a corporate planner at Dallas-based Texas Utilities Co., which earlier this year acquired The Energy Group PLC in the U.K.

Other executives unhappy with the lack of clear regulatory treatment declined to speak out publicly.

On the other hand, some Fortune 500 companies are satisfied with the Treasury Department's guidelines. "We support [the Treasury] on this. We don't need more clarity," said Joseph E. McCole, senior tax counsel at Cigna Corp., a Philadelphia-based financial services company.

"We've decided to follow the [Treasury Department] guidelines, expense the costs and get it out of the way," said Dawn E. Brush-Zougari, manager of international accounting at Rosenbluth International, a travel management firm that is also in Philadelphia. "We'd rather just get it over with." □

MORE ONLINE

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RELATED CORBA TERMS

▸ **Object Management Group (OMG)** – The group responsible for developing the CORBA specification. Based in Framingham, Mass., OMG has more than 800 members from the vendor and user communities who vote on changes to the specification.

▸ **Distributed Component Object Model (DCOM)** – Microsoft's technology for objects to share data and capabilities in a disparate Windows setting. Like CORBA, DCOM defines the interfaces of objects and the ways to carry out tasks remotely.

▸ **Object** – A self-contained module of instructions and/or data that can be plugged in to larger applications to carry out a specific business task.

▸ **Object Request Broker (ORB)** – Software that carries out the functions defined by the CORBA specification.

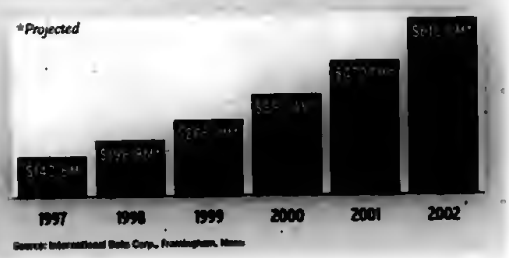
▸ **Interface Definition Language (IDL)** – Code written by a developer that tells the ORB what methods and properties an object has.

▸ **Internet InterORB Protocol (IIOP)** – CORBA message protocol used over the Internet or an intranet.

▸ **Remote Method Invocation (RMI)** – Technology Java programmers would use to allow Java objects to work with other Java objects that are located elsewhere in an enterprise.

Source: *Computerworld* and *The Computer Glossary* by Alan Freedman

Object middleware revenue, a market that is synonymous with CORBA



Source: International Data Corp., Framingham, Mass.

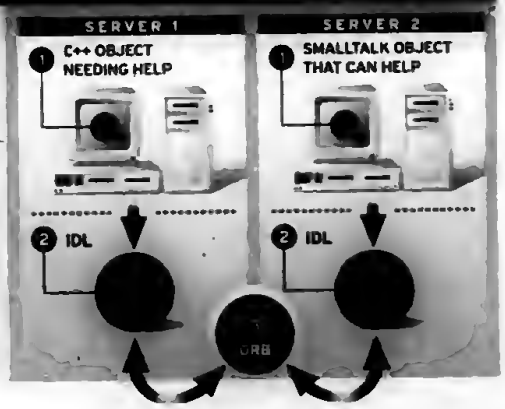
■ *Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@cw.com.*

CORBA

DEFINITION: Common Object Request Broker Architecture (CORBA) is a technology specification that outlines how self-contained blocks of data, or objects, can share capabilities to form applications. CORBA helps solve compatibility issues that arise when objects are written in different languages and run on different platforms and machines. Since CORBA's debut in 1991, vendors and users have worked to advance the specification through an open forum provided by the Object Management Group.

HOW IT WORKS

1. Two objects reside on two different servers.
2. A developer writes the IDL to describe the objects. For the two objects to share data and tasks, they need an ORB.
3. The ORB will provide services to the users and act as the liaison between the two objects.



Technology as difficult as it is useful

By David Orenstein

THE COMMON Object Request Broker Architecture (CORBA) is a powerful technology, but it can be difficult to use.

What makes this technology so complicated is that it must allow objects written in different languages, running on different platforms and located in different places to share functions and data.

Helping those objects communicate are Object Request Brokers (ORB), which follow the CORBA standard and can establish links between objects.

"ORBs are designed specifically to handle the interoperability of objects on a network," explains Steve Garone, an analyst at International Data Corp. in Framingham, Mass., which is a sister company to *Computerworld*.

AT ISSUE

Fully independent, but not easy to learn

QUITE A LEARNING CURVE

But it isn't that easy. "CORBA traditionally has [presented] quite a learning curve," says Larry Perlstein, an analyst at Dataquest in San Jose, Calif. For example, programmers need to learn Interface Definition Language to describe the properties and functions of an object to the ORB.

Commercial ORBs make life easier by providing services such as automatically finding objects, naming them and managing them. Popular services eventually are introduced into the CORBA specification, but the race to provide new services is what differentiates the commercial ORBs. Major vendors include Iona Technologies Ltd., BEA Systems, Inc., Inprise Corp., Siemens Nixdorf Information and Visual Edge Software, Inc.

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CORBA competes with other forms of middleware. Remote Procedure Calls link together non-object-oriented programs written in Cobol or Fortran. Message-oriented middleware quickly routes data among applications, but it's best for simple, point-to-point connections, says Colin Mahony, an analyst at The Yankee Group in Boston. □

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RELATED CORBA TERMS

▸ **Object Management Group (OMG)** – The group responsible for developing the CORBA specification. Based in Framingham, Mass., OMG has more than 800 members from the vendor and user communities who vote on changes to the specification.

▸ **Distributed Component Object Model (DCOM)** – Microsoft's technology for objects to share data and capabilities in a disparate Windows setting. Like CORBA, DCOM defines the interfaces of objects and the ways to carry out tasks remotely.

▸ **Object** – A self-contained module of instructions and/or data that can be plugged in to larger applications to carry out a specific business task.

▸ **Object Request Broker (ORB)** – Software that carries out the functions defined by the CORBA specification.

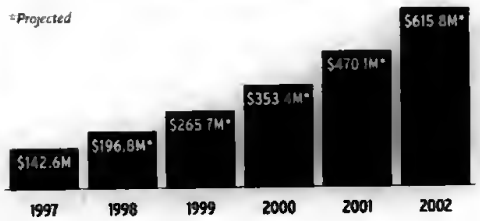
▸ **Interface Definition Language (IDL)** – Code written by a developer that tells the ORB what methods and properties an object has.

▸ **Internet InterORB Protocol (IIOP)** – CORBA message protocol used over the Internet or an intranet.

▸ **Remote Method Invocation (RMI)** – Technology Java programmers would use to allow Java objects to work with other Java objects that are located elsewhere in an enterprise.

Source: *Computerworld* and *The Computer Glossary* by Alan Freedman

Object middleware revenue, a market that is synonymous with CORBA



Source: International Data Corp., Framingham, Mass.

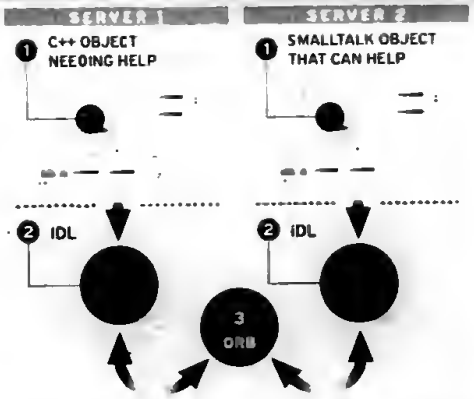
■ *Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at* ***stefanie_mccann@cw.com.***

CORBA

DEFINITION: Common Object Request Broker Architecture (CORBA) is a technology specification that outlines how self-contained blocks of data, or objects, can share capabilities to form applications. CORBA helps solve compatibility issues that arise when objects are written in different languages and run on different platforms and machines. Since CORBA's debut in 1991, vendors and users have worked to advance the specification through an open forum provided by the Object Management Group.

HOW IT WORKS

1. Two objects reside on two different servers.
2. A developer writes the IDL to describe the objects. For the two objects to share data and tasks, they need an ORB.
3. The ORB will provide services to the users and act as the liaison between the two objects.



Technology as difficult as it is useful

By David Orenstein

THE COMMON Object Request Broker Architecture (CORBA) is a powerful technology, but it can be difficult to use.

What makes this technology so complicated is that it must allow objects written in different languages, running on different platforms and located in different places to share functions and data.

Helping those objects communicate are Object Request Brokers (ORB), which follow the CORBA standard and can establish links between objects.

"ORBs are designed specifically to handle the interoperability of objects on a network," explains Steve Garone, an analyst at International Data Corp in Framingham, Mass., which is a sister company to *Computerworld*.

AT ISSUE

Fully independent, but not easy to learn

QUITE A LEARNING CURVE

But it isn't that easy. "CORBA traditionally has [presented] quite a learning curve," says Larry Perlstein, an analyst at Dataquest in San Jose, Calif. For example, programmers need to learn Interface Definition Language to describe the properties and functions of an object to the ORB.

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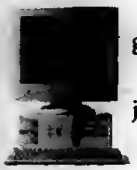

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OPINION

Linux gets real

If you had told me six months ago that an operating system written by a college student and given away free on the Internet would be one of the major news stories of 1998, I would have laughed.

But Linux has become a legitimate industry phenomenon at breathtaking speed. And I suspect it's set some pulses to racing at Microsoft.

First, a disclaimer: I don't believe Linux will topple Microsoft anytime soon. Nor do I buy estimates that say there are already 7 million Linux users.

But I do believe Linux has quickly emerged as a legitimate alternative to Windows NT for some users. In just six months, nearly every major database vendor has endorsed it along with some office suite and utility makers. Last week, Intel and Netscape made investments in Linux vendor Red Hat.

The timing isn't good for Microsoft. With the NT 5 development in apparent disarray, Microsoft is doing damage control while Linux basks in media adulation. That has to be driving Microsoft to distraction.

Unfortunately for Microsoft, Linux has some unique characteristics that will make it resistant to efforts to surround and expel it. For one thing, it's free, which means Microsoft can't easily give away an alternative. Linux is also a nebulous target. Because no one "owns" it, Microsoft is forced to fight a guerrilla war against an unseen enemy.

Linux also has garnered a following among Microsoft's core programmer constituency. They love the freedom Linux gives them to play with source code, something Microsoft will cede when the moon turns to Swiss cheese.

All of that means Linux has the spotlight virtually to itself until NT 5 materializes. Let's hope the Linux adherents in the vendor community don't screw it up.

Let's hope vendors resist their instincts to try to take Linux proprietary or expose it to an arduous standards process. Let's hope they don't try to turn Linux into an embarrassing anti-Microsoft crusade.

Let's hope Linux is allowed to achieve its potential naturally: by growing from the grassroots level. That's been the beauty of this whole phenomenon, so far.

Paul Gillin, *editor in chief*
Internet: *paul_gillin@cw.com*

LETTERS

Mental block? Well, have a cookie!

I'M WAITING in response to Julia King's Aug. 31 story about programmer health ["Oreos & coffee just don't cut it"], with a different perspective regarding the value of America's favorite cookie as the year 2000 "silver bullet."

While it's true Oreos are considered a snack food, they also contain a secret ingredient that stimulates the thought process and creative juices. Everyone knows there are a gazillion ways to eat an Oreo.

You can twist them, break them in half, eat just the cream filling, dunk them in milk or eat them right out of the box.

That's also true for the remediation and testing of Y2K business systems.

By eating six to eight Oreos per day for three months, application programmers can become twice as creative, think out-of-the-box more often, solve logic problems in a fraction of the time, and complain half as much. Those are the people I want working on my Y2K problems!

So, if your mom gave you Oreos as a kid, why mess with a time-proven solution?

My recommendation to all CEOs/CIOs: Make sure that a 1-pound box of Oreos is sitting on every computer, printer or modem in your company.

Tony DelDuca
Vice president of information services
Nabisco Foods, Inc.
East Hanover, N.J.
DelDucaT@nabisco.com

Julia King responds: Indeed, further research, aided by the six boxes of Oreos that Mr. DelDuca was kind enough to send my way, indicates he may be right about Oreos having a positive impact on creativity and accuracy. Last week, my kids insisted it was the Oreos in their lunch bags that helped them earn A's on their spelling tests.

Computing pioneers: Relevant and willing to lend a hand

I AM A NEW subscriber to your excellent publication, and I am amazed and appreciative of your coverage of all the new developments.

As a senior throwback to the earliest computer days, it would be interesting to hear from other pioneers — perhaps in a regular forum or column. I know that not many of us are left, but the ones that are can still make a contribution.

We all have a common bond because we fought for the acceptance of new ideas and systems. We all contributed by establishing some kind of foundation for the developments of today.

We never had to face a year 2000 problem, but we did have some problems that still haunt us.

Robert C. Verkler
Professor emeritus
Information systems
California State University
Los Angeles
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It takes a lot to be secure

IN YOUR ARTICLE, "NetWare Tackles Internet Security" [CW, Aug. 3], I read with great interest how Novell is committing to address the need for greater security over the Internet. That they are offering Public Key Infrastructure Services in the context of the industry-standard Lightweight Directory Access Protocol is also laudable. The embedding of encryption and other security technologies is vital to bringing about greater system and network security generally.

It would be naive for users to think, however, that this type of addition alone makes their networks "more secure." It certainly adds protection for message content and integrity, as well as adding improved source message authentication capabilities. But any such measure must be viewed within a cohesive IS program that includes controls, monitoring, countermeasures, disaster-recovery and other protective and detective measures.

Ross A. Leo
Committee member
International Information Security Foundation
Houston
randleo@c-com.net

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

It's time to play Tag-Team Telco!

Joseph E. Maglitta

Thanks for calling 1-900-BIT-PUSH, the wildest voice, data and video chat anywhere! In a moment, we'll begin "Big Binary Bang!" — the star-studded pay teleconference featuring the communications industry's hottest tag-team action.

You'll hear highlights — actual quotes — from the big confabs — Net Events, Telecosm, Internet Commerce Expo — all in one rockin', cost-cuttin' ring. Join us as telecom's heavyweights battle to pump out cheap zeros and ones in exotic new ways! Let's join Jay Enzo at ringside.

Join us for highlights from recent, star-studded Telepalooza events.

Enzo: Wow! This match has barely started, and it's *wild* down here. Dozens of combatants are roaming the ring in what promises to be an acronym-throwing donnybrook. That's MCI/WorldCom in the gold trunks, Nortel/Bay Networks in blue, AT&T/TCI in red.

Let's grab some quick comments and predictions before the action starts. Veteran referee George Gilder, why the excitement?

Gilder: Bandwidth blowout means we will have masses ... of new bandwidth. Bandwidth abundance is the key to success for companies. Global network traffic is probably approaching a petabyte per second.

Enzo: That's quite a few zeros! Alex J. Mandl, you headed AT&T; now you're CEO at Teligent. Do telcos have big enough bells to monopolize voice *and* data traffic?

Mandl: Their appetite for trying new things is not there. It might get you in trouble or fired.

Enzo: The bearded gent in the cowboy hat is nodding.

Dave Hughes, president, Old Colorado City Communications: Who needs the phone company? I sure don't. Bypass 'em!

Audience: I-S-D-N is D-E-A-D! I-S-D-N is D-E-A-D!

Enzo: Here's another upstart telco and AT&T alum. Any predictions from Qwest Communications CEO Joe Nacchio?

Nacchio: The world will go to an IP, packet-based solution. Not AT&T or MCI. UUnet will be the standard.

Enzo: And here's the never-shy CEO of PSINet.

Bill Schrader: I predict flat-rate pricing will win. Within five years, 80% of voice calls will be delivered, at some point, over IP. More and more local loop. No more telephone companies in five years — they'll be called ISPs.

Enzo: Any limits, Bill Joy of Sun?

Joy: All devices can be networked. Even refrigerators.

Enzo: Eric Schmidt, any worries from your seat as CEO of Novell?

Schmidt: Bandwidth is being deployed at extraordinary levels, yet software industry productivity seems to be getting worse. Software is the limiter. There is a disconnect looming.

Enzo: Last question, George Gilder. Who are the key players to watch?

Gilder: Uniphase. Qualcomm. Qwest Communications. Ciena. JDS Fitel.

Enzo: There you have it. Whether it's fiber, satellite, wireless or laser, the next six months promise one thing: Fat pipes, cheap. We'll be back after this:

To bill this call and all future corporate voice and data transmissions to your long-distance provider, press 1. Press 2 to bill to your local phone company. Press 3 to bill to your Internet service provider. Press 4 to bill your cable company. Press 5 to bill your networking vendor. Press 6 to bill all of the above. Press 7 if you'd rather do it yourself. Press 8 to pay using frequent-flier miles. If you don't know what to do, please stay on the line. Please have a fresh contract or purchase order ready. ...□

Maglitta is Computerworld's industry editor. His Internet address is joseph_maglitta@cw.com.

Why your department needs to implement 360s

Michael Schrage

Whenever managers talk about 360-degree job reviews, I think of that joke about the nattering egomaniac at the cocktail party: "But enough about me; let's talk about you. What do *you* think about me?"

In the 360, you're evaluated not just by your manager — who usually has sought opinions from a couple of your peers and maybe one of your reports, if you're lucky — but also by the people you work with frequently, regardless of title or department. Every organization I know that has implemented the 360 moans about what a painful and time-consuming process it can be.

Then again, every group I know that's gone through the pain of doing it more than once says that the 360 is overwhelmingly superior to the traditional, top-down job review. People seem to get far more out of 360s then they initially expected. Giving honest critiques and criticisms matters every bit as much as receiving honest ones.

IS needs 360s — badly. Not because IS has a miserable tradition in the area of performance reviews (it does) nor because IS doesn't always do the best job of working with other parts of the organization (it doesn't). The main reason IS should passionately embrace 360s is that these reviews represent the best way to promote a better communication of expectations in the enterprise. The kind of dishonesty and ambiguous expectations that so poison the reputation of IS in many organizations simply can't survive 360s.

Actually, that isn't quite true: Dishonesty and destructive ambiguity can survive any review mechanism that organizations can devise. However, 360s can dramatically raise the cost of preserving dysfunctional management. When it becomes more expensive managerially to be dishonest than forthright, that's a good start. At one global professional services firm, the new IS 360 created an esprit de corps that simply hadn't existed before: It was very healthy for the department's managers to hear how *they* were perceived by internal customers. The department became more transparent to its clients; the clients became more transparent to IS.

Intriguingly, the review function also made everyone more self-conscious about just how collaborative they were prepared to be. The 360 created a virtual, cross-functional team based not on performance goals, but on performance review. Reciprocity can be a beautiful thing, no? Of course, 360s can make people uncomfortable. One regional IS manager at a global financial giant ruefully observed that in his 360, he heard the kinds of complaints his wife had been making for years. He was emotionally stunned by the consistency of the feedback, which he couldn't dismiss precisely because it came from so many sources.

People seem to get far more out of these reviews than they expected.

In this column, I have consistently argued that productivity is more likely to come from innovations in behavior than innovations in technology. What makes the 360 so powerful for IS is that it forces technical people and businesspeople to communicate about something other than the tasks, specs and deadlines at hand. Properly managed — which, emphatically, isn't a given — 360s create new networks of interactions around the challenge of creating productive relationships.

Of course, 360s hardly qualify as a managerial panacea or productivity balm. But they do focus attention on the real problems most technically competent IT organizations face: honesty and expectations.□

Schrage is a research associate at MIT Media Lab and author of No More Teams! *His Internet address is schrage@media.mit.edu.*

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Are you ready to ride out an economic storm?

Allan E. Alter

These are scary times. With depression in Asia, panic in Russia, Latin America looking shaky, U.S. exports slumping and Wall Street turning bearish, it's getting harder to see how the U.S. can avoid being slammed by an economic hurricane.

It's already socking my neighbors: Intel, in nearby Hudson, Mass., is planning to lay off more than 600 workers. And even if this hurricane only grazes us, the bubbly, optimistic U.S. economy of the past five years is toast.

It's time to figure out what a U.S. recession would mean for IT.

It's time for IT leaders to ask, "What does a recession mean for us?" Creating business value is our reason for existing. What value can we bring when a cyclone is bearing down?

So far, there's just been some IT belt-tightening in a few industries hit hard by Asia's troubles: high-tech, capital equipment and consumer packaged goods manufacturers [CW, Sept. 7]. But it's going to take more than knee-jerk budget cutbacks to weather this storm.

Let's start with those budgets, and my Hudson neighbors. We've spent the past several years hustling to make our IT organizations attractive. Will we start to dump the same people we've worked so hard to recruit and retrain? Instead of cutting budgets with the same old bloody ax — by lopping labor costs by X% — follow the recommendations that consultants Tony and Jeremy Hope offered in our pages: Ask your staff to help identify costly IT processes that don't add value, then reduce your budget by eliminating those processes ["Crunch numbers, not people," CW, Dec. 16, 1996]. Better to cut consultants and capital costs than the people you'll need when the sun comes out again.

Those hard-hit Internet stocks ought to get us thinking about our own Internet strategies. On the face of it, electronic commerce's ability to reduce transmission and transaction costs make it a natural for hard times. But are our strategies sound, or based on wishful, overly optimistic thinking? Will they work in a recession? Now, before the storm surge washes away your electronic business, is the time to make sure your World Wide Web strategy is sound, scalable, linked to business needs and delivers a real, sustainable advantage.

LOOK AT THE LIMITS

It's also time for a sober look at the limits of our technology. Blind faith in computerized trading programs recently brought Long-Term Capital Management LP, a Greenwich, Conn., hedge fund with $80 billion in assets, to its knees. The fund reportedly lost 44% of its value in August; I doubt its technologists are the only ones suffering from hubris. Pundits have said today's inventory and supply-chain management systems will help prevent recessions by preventing inventory surpluses.

Oh yeah? Can they really stand up to a big drop in demand? When the business barometer plummets, will our new data mining, resource planning and forecasting systems generate business intelligence — or gobbledygook? It's time to investigate the assumptions behind the algorithms, make sure they aren't running on autopilot and tune them to find opportunities in a recession.

Maybe we'll be lucky, and this economic hurricane will miss us. But I wouldn't count on it; history teaches that markets go down and tough times happen. For IT leaders, it isn't enough to just board up our storefronts and hit the highway. What are *you* doing to help your company ride out a business hurricane and emerge stronger than ever? Send me E-mail and let me know. □

Alter is Computerworld's department editor, managing. His Internet address is allan_alter@cw.com.

Good news for IT: The buyer is in charge

David Moschella

There are seemingly countless theories about how the Web has changed the dynamics of the IT industry, but here is one of my favorites: For the first time in the industry's history, people are buying computers based on what other IT buyers are doing. IT product vendors, although hardly irrelevant, clearly are no longer in charge.

Allow me to explain what this means and why it matters. Today, most of us care much more about what is happening at our favorite Web sites than about anything going on at Intel, Microsoft or Netscape. How often do we think about the latest Pentium chip or browser, or what's new about Windows 98? By contrast, every day there's something new on the Web that could be of immediate use to us. (Whether we can find it or not is, of course, another question.)

This might seem obvious, but in fact the IT industry has never worked this way. Before the Internet, we all bought computers based on what either we or our organizations wanted to do with them. What other organizations did with computers didn't directly affect us.

Today, however, customer IT activity is the most compelling link in the IT supplier value chain. In other words, what Web retailers, publishers, educators and entertainers are doing is the main reason many people are now buying computers. Businesses such as Amazon.com and Yahoo entice people to get on the Internet and then drive the traffic that drives further investments in IT infrastructure. In the PC era, whether I used my PC or not essentially had no effect on the value of PCs to you.

This is more than just semantics; it's really a new phase of the industry's evolution. Telephone communication is the only other business I can think of where my use of a product directly creates value for other people using that very same product. For example, how Citibank uses airplanes, clothing, cars or copiers has no effect on how its customers use those products. But how Citibank uses the World Wide Web creates real value for its Web-oriented customers.

PERVASIVE PATTERN

Most important, the idea of users creating value for other users isn't just a consumer phenomenon. The same pattern of mutual benefits is found in just about all extranet, electronic data interchange, supply-chain management and other cooperative business systems. Stated simply: What your customers, suppliers and partners are doing with IT is likely to have much more effect on your IT strategy than anything coming from your chosen set of IT suppliers.

Customers are now the most compelling link in the supplier value chain.

The overall effect is that innovation in IT hardware and software is now much less important than innovation in specific, network-based services. This represents real industry progress. Services exist in virtually limitless variety and typically provide tangible customer value. These attributes will both expand and stabilize our industry.

They also explain why the whole issue of IT return on investment is fading away. It is fundamentally easier to assess the value of specific services provided directly to customers than it is to determine the ROI for the internal use of generic IT products.

The bottom line is that computers are now used to create value for those who use computers. It's this mutually reinforcing dynamic that makes it all but certain that our industry will continue to move ahead — but with customers now clearly in the lead. □

Moschella is an author, independent consultant and weekly columnist for Computerworld. His Internet address is dmoschella@earthlink.net.

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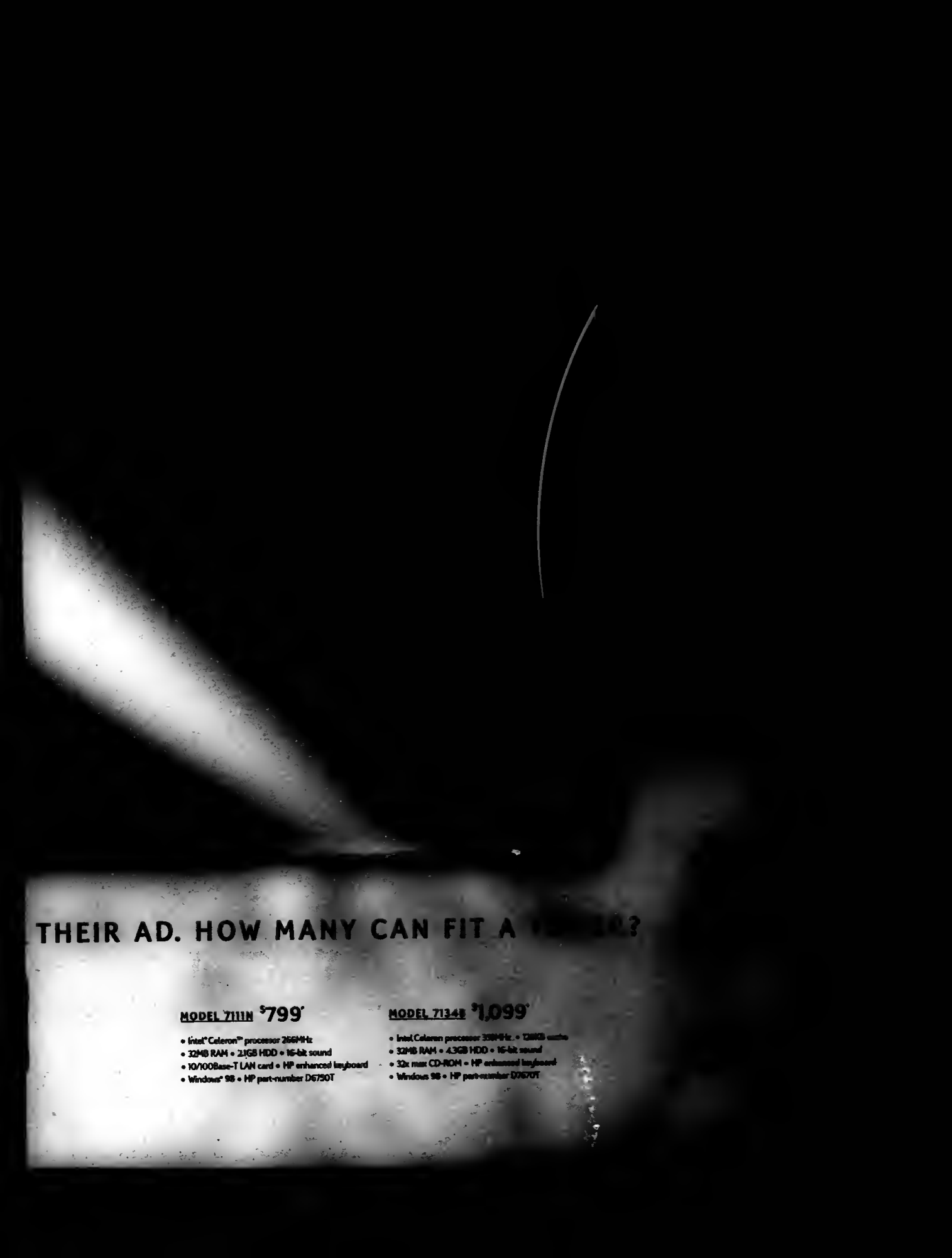
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"If they can put a man on the moon, why can't they solve my company's IT problems?"

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Retailer strategy

Hudson's Bay Co., Canada's oldest department store retailer, has purchased a suite of decision-support applications from Knowledge Discovery One, Inc. (KDI) in Austin, Texas. Hudson's Bay plans to use KDI's Retail Discovery Suite to identify its most profitable customers and products at the transaction level to improve marketing and merchandising decisions such as assortment planning and store layout.

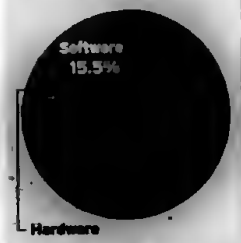
More online banking

BankAmerica Corp. has introduced a service for California residents to apply for home equity loans online and receive decisions within seconds.

From the BankAmerica World Wide Web site (www.bankamerica.com), consumers can apply for a home equity line of credit. Seconds after submitting the application, consumers will receive a response stating whether the application has been approved, declined or requires further review by a loan officer at the San Francisco-based bank. If the loan requires further review, a Bank of America loan officer will contact the applicant within 24 hours.

Where the money goes

U.S. spending on year 2000 by IT spending category, 1995 to 2001



TOTAL SPENDING: $122B

Base: Survey of 500 IS executives; figures don't address non-IT expenses such as legal fees or chips embedded in non-IT equipment

Source: International Data Corp., Framingham, Mass.

Work like a boomer? As if!

▸ *Gen Xers rewrite rules on teaming, attitude*

PETER FERGUSON

By Barb Cole-Gomolski

IN AN EFFORT to attract and retain young IS professionals, some companies have had to retire some of their longstanding management techniques.

MANAGEMENT TECHNIQUES

Increasingly, the personality traits, likes and dislikes and tendencies of workers born between 1966 and 1981 are factoring into management decisions, according to information systems managers.

Marilyn Moats Kennedy, president of Career-Strategies, a consulting firm in Wilmette, Ill., said companies' unwillingness to adjust to generational differences is contributing to soaring turnover at many sites.

Moats Kennedy helps companies tweak their management styles in order to accommodate generational differences.

She bases her observations on surveys such as the U.S. Census Bureau's Current Population Survey, studies published in *American Demographics*, a magazine in Ithaca, N.Y., and more than a thousand interviews she has conducted.

She said younger workers are more interested in education and more individualistic than their older counterparts.

Today's young adults are also less confident than their predecessors about the stability of jobs and earnings, according to Moats Kennedy.

As a result, they look beyond salaries for jobs that offer opportunities for skill building and advancement, she said.

"Generation X poses some unique challenges [to IS departments]," said Larry Grandia, chief information officer at Intermountain Health Care in Salt Lake City.

Gen Xers, page 42

Workers rule on business changes

▸ *Steelmaker customizes PeopleSoft as a result*

By Craig Stedman

LIKE MANY packaged business application buyers, Algoma Steel, Inc.'s management team wanted to change the way things are done at the company to fit the software it chose.

But first, Algoma's 4,000 employees had their say. And their verdict was: We'll go along with some of the proposed changes, but not all of them.

Workers own a third of the highly unionized steelmaker and essentially share control with its executives as the result of a 1992 bankruptcy restructuring. For example, business decisions are vetted by a steering committee of eight Algoma managers and eight union employees that meets each week.

The joint decision-making extended to the question of whether Algoma, based in Sault Ste. Marie, Ontario, should change its internal business practices or customize PeopleSoft, Inc.'s financial and human resources applications. The $800 million company — Canada's third-largest integrated steelmaker — is installing the software as part of its year 2000 fix.

"In the old days, management might have said how we were going to do it and let the dust settle later," said Charles Whitfield, Algoma's manager of information systems. "But now, there's really nothing of major significance that can be done in the company without the agreement of the union."

The goal of Algoma's management was twofold: to hold down implementation costs by avoiding software modifications and to take advantage of the built-in business practices that

Workers, page 42

Algoma Steel workers own a third of the company and shared decisions in its PeopleSoft implementation

IS shop has hurricane thing licked

By Nancy Dillon

WHEN JEAN SOFFEL reminisces about David, Bonnie, Earl and Georges, he isn't talking about his long-lost friends. He is referring to tropical tempests that have yet to bring his data center down.

Soffel's Savannah, Ga.-based company, business jet maker Gulfstream Aerospace Corp., straddles the hurricane belt. Soffel said he has been through six serious hurricane watches in the past four years.

"We were coming down from the Bonnie alert when we heard Georges might be headed our

IS shop, page 42

Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

Retailer strategy

Hudson's Bay Co., Canada's oldest department store retailer, has purchased a suite of decision-support applications from Knowledge Discovery One, Inc. (KD1) in Austin, Texas. Hudson's Bay plans to use KD1's Retail Discovery Suite to identify its most profitable customers and products at the transaction level to improve marketing and merchandising decisions such as assortment planning and store layout.

More online banking

BankAmerica Corp. has introduced a service for California residents to apply for home equity loans online and receive decisions within seconds.

From the BankAmerica World Wide Web site (*www.bankamerica.com*), consumers can apply for a home equity line of credit. Seconds after submitting the application, consumers will receive a response stating whether the application has been approved, declined or requires further review by a loan officer at the San Francisco-based bank. If the loan requires further review, a Bank of America loan officer will contact the applicant within 24 hours.

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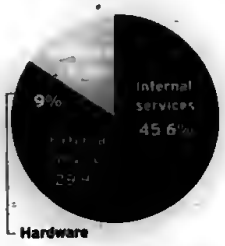

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IS shop, page 42

Workers rule on change

CONTINUED FROM PAGE 41

PeopleSoft has culled from a wide group of users.

Algoma officials pushed for the internal process changes during three months of weekly meetings with a union working group early this year.

Payroll was the biggest bone of contention. Algoma has single contracts with its hourly and salaried employees now, but built in to those agreements are about 2,000 job classifications with unique combinations of hourly rates and bonuses — leftovers from the days when the company negotiated separately with 11 union locals.

"It's a pretty messy monster," Whitfield said. "On average, only two people get paid in the same way."

Bernie Bos, manager of wage and salary evaluation at Algoma, said the union has approved about half of the changes in payroll rules that management pitched. The process was complicated by the fact that the company's contract with its hourly workers comes up for renegotiation next year, he added. "It would have been easier if things happened the other way around."

The union's veto of other proposed changes left Algoma with a lot of software customizing to do. And that had a big impact on its rollout schedule: The company began using PeopleSoft's human resources administration and accounts receivable software in August, but the payroll module isn't due to go live until February.

The modifications are taking up about 30% of the payroll implementation work schedule and 10% of Algoma's $6 million budget for the entire project, said project manager Gary Disano. But that is partly because Algoma is spending more time upfront on development in an effort to keep the software changes from slowing down future upgrades, Disano said.

Algoma's employee control may be rare, but most users end up customizing packaged applications, according to Bobby Cameron, an analyst at Forrester Research, Inc. in Cambridge, Mass. For example, a recent Forrester survey of 50 Fortune 1,000 companies found that three-quarters modified the software they bought.

"It's very complex to get human beings to cooperate" with business changes, except in "militaristic-style organizations," Cameron said. □

Workplace demographics

Boomers 1946-1959	Cusp'ers 1960-1965	Gen X/post-TV 1966-1981
Want to manage	Will lead and follow	No need to lead
Loyal to employer	Mixed	Loyal to skills
Work well with others	Work well with others	Want to work alone
Technically challenged	Technically challenged	Technically savvy
Honor chain of command	Mixed	Individual first

Source: CareerStrategies, Wilmette, Ill.

Gen Xers rewrite rules

CONTINUED FROM PAGE 41

Grandia said he isn't experiencing generational differences firsthand with his staff. But managers at other companies have shared such experiences with him. "Gen X folks feel strongly about the hours they work," he said. It isn't uncommon to hear, " 'Hey, I'm not going to carry a beeper.' " he said.

Marian Louie, in her mid-20s, agreed. She recently accepted a job as a consultant with Dutch software maker The Baan Co. "I interviewed with the Big Four [accounting and consulting] firms," Louie said. "But when you get hired by them, you work like a dog. I felt the culture was more balanced [at Baan]."

Her starting salary is in the high 30s, significantly less than she might make as a new consultant at a Big Four firm. However, Baan will put her through an intensive, eight-week training course on its enterprise resource planning system.

WHERE'S THE LOYALTY?

Another area where younger workers differ from their older counterparts is loyalty. "Gen Xers generally don't believe in [it]," said Lynn Ware, president of Integral Training Systems, a consultancy in Half Moon Bay, Calif. Many saw their parents "downsized" from jobs they had held for 20 years.

"For these [young] workers, job security comes from having skills that will keep them employed," Ware said.

As a result, a lot of companies are putting training materials online or building knowledge management systems that let workers fill in skills gaps as they go along.

In addition to increasing training, companies should try to accommodate the individualistic nature of younger workers, according to Moats Kennedy. Emphasizing teamwork probably isn't the best approach to motivating these workers, she said. "They are more interested in improving themselves than they are in being part of a winning team," she said.

However, the team-oriented nature of IS makes that difficult. "The bulk of our projects today require a degree of integration that we have not seen in the past," Grandia said. IS staffers are required to join teams made up of developers and users, he said. "Very few projects involve a programmer working in isolation," he said. □

IS shop handles hurricanes

CONTINUED FROM PAGE 41

way," the data center manager said in an interview Sept. 25. "I just pulled out the checklist again and sent another alert to my team members."

Soffel's hurricane checklist is a sequence of steps based on a series of triggers.

When hurricane-force winds are expected within 36 to 72 hours, Soffel notifies his Chicago-based hot site contractor that he is under a hurricane watch.

He then orders his remote storage facility to send his backup tapes to the hot site via courier, and he alerts a six-member disaster recovery team to prepare for travel to a Macon, Ga., rally point 175 miles west of Savannah.

Companywide E-mails, voice mails and faxes warn of a possible data center shutdown, and kits containing several 50-gallon plastic bags to help protect equipment are distributed to desktop users.

When hurricane-force winds are expected within 24 hours, processing stops and users are advised to bag up their equipment and evacuate. Data center equipment is wrapped in polyethylene sheathing, and five of the six-member disaster team leave for Macon. One person stays behind to complete a final backup using high-speed Timberline tape drives from Storage Technology Corp.

The last team member packs the 150 to 200 final backup tapes in waterproof shipping cases and transports them to the rally point. Soffel then decides whether or not to continue on to the Chicago hot site.

"We've had two wet runs that took us all the way to Macon," Soffel said. "But the bell hasn't rung for the real one yet."

If it ever does ring — "and it's just a matter of time" — Soffel said he would get everyone on a plane and then notify a second-wave six-person team to join them to provide a second shift of workers.

Soffel said thorough preparation of all response team members is critical. Complete system restoration at his hot site is expected to take no more than 12 to 16 hours.

HELP NEEDED

But considering travel time, his first-wave team may be going around the clock. "We would really depend on the second wave to get there as fast as possible and be able to take over," he said (see chart).

Unlike banks or other transaction-intensive companies with sophisticated remote mirroring systems, Gulfstream can't cost-justify the latest instant fail-over technologies, Soffel said. "We're not like McDonald's where if we close down, we can't sell a hamburger," he said. His $1.9 billion company makes only about 65 aircraft per year.

"In my experience, it's near-universal that Fortune 500 companies have a disaster recovery plan," said Ken Brill, executive director of The Uptime Institute in Santa Fe, N.M. "But when you ask these people if they'd bet their companies on these plans, only about one-third say yes."

Brill called Gulfstream's hurricane IT plan "wonderful."

In stark contrast to Soffel and his systematic approach is Marc Alan Reichbart, CEO of Bassett Hound Co. in Boynton Beach, Fla.

Reichbart's hospitality service company does regular backups. But as he planned for hurricane evacuation on Sept. 24, data recovery wasn't a primary focus. "My disaster recovery plan right now is to leave," Reichbart said. "When it's all over, I'll make a list of what I should have done differently. And then I just hope I follow through on it. . . . Right now, I feel like I'm in an episode of *Road Runner*." □

Tips for prepping data center disaster recovery teams:

- Include members in ongoing refinement of disaster recovery checklist.
- If team members are expected to travel, issue individual company credit cards and distribute booklets with predetermined transportation and hotel information.
- Send team members to hot site (in rotation if necessary) so they can see how it functions and run tests.
- Send team members to disaster planning workshops. One option is the certification program at the Disaster Recovery Institute International in St. Louis.

Source: Jean Soffel, Gulfstream Aerospace Corp., Savannah, Ga.

MORE ONLINE

For resources on disaster recovery and crisis management, visit *Computerworld online*.
www.computerworld.com/more

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Internet Commerce

Extranets • The World Wide Web • Intranets

Briefs

Fastest-growing online product categories*

Industry	Annual growth
Travel	302%
Music	269%
Clothing	250%
Autos	216%
Consumer electronics	205%

* Based on sales in the past year
Source: The American Internet User Survey; Cyber Dialog, Inc., New York; interviews with 1,000 Internet users and 1,000 non-Internet users. Margin of error +/- 3.1%

GM to expand site

General Motors Corp. last week announced plans to expand its BuyPower electronic-commerce pilot project nationwide early next year. The site, now limited to California, Oregon, Washington and Idaho, lets consumers check GM dealer inventories, request prices on a specific vehicle in stock and schedule a test-drive. In the four-state test area, about 35% of consumers who bought GM vehicles and use the Internet visited the BuyPower site before making a purchase.

Vertical search tool

Excalibur Technologies, Inc. this week will announce WebExpress, search and retrieval software developed for World Wide Web publishers, online services and Web content providers. It supports more than 200 document formats. The product is the first in a series of vertically focused releases from Excalibur. WebExpress is available now. Pricing starts at $20,000.

Real apps on the 'net

Oracle Corp. in Redwood Shores, Calif., said it is ready to start piloting a promised Internet-based application rental program aimed at small and midsize businesses. Oracle Business OnLine will let users tap in to servers running Oracle's packaged business applications on a subscription basis.

Office Depot learns from experience

▸ *Upgrades Web site for corporate customers*

By Carol Sliwa

OFFICE DEPOT, INC. targeted small-business customers and consumers with the January launch of its Internet electronic-commerce site.

Now, its corporate contract customers — those who have negotiated pricing with the Delray Beach, Fla., office supplier — are getting the chance to reap the benefits of the technology used to build the Officedepot.com site.

Those Office Depot contract customers now can access the site via the World Wide Web rather than a private extranet connection. They also will see more individually tailored information because Office Depot is scrapping the cumbersome Common Gateway Interface scripts of the homegrown system, which contract customers had been using since June 1997, in favor of Active Server Pages that programmers wrote to work with Microsoft Corp.'s Site Server Commerce Edition.

"It was getting harder to update our internal system, and as we added customers at a rapid rate — about 200 to 250 customers per week — it required more hardware to do the processing," said Monica Luechtefeld, vice president of contract marketing and sales administration at Office Depot.

Microsoft Site Server will allow a company to update internal systems and add customers.

For corporate contract customers, a user's password needs to trigger a customized page view that displays the products the individual can order, with any special pricing. It also incorporates any business rules for the specific user, such as spending limits.

Active Server Pages — the term that Microsoft uses for the dynamic Web pages generated in the Windows NT Internet Information Server environment — can be created on the fly based on user input. Developers build templates using Hypertext Markup Language and Visual Basic scripts, and, based on user input, information is pulled from databases and inserted into the pages.

Office Depot has about 100 pages of actual logic, but they can deliver tens of thousands of

Office Depot, page 46

Hollywood insider now starring at food Web site

Richard Frank, known as a "consummate Hollywood insider" for more than two decades, has gone from heading TV and movie efforts at The Walt Disney Co. and Comcast Corp. to heading a 2-year-old Internet start-up called Cybermeals. Why? Computerworld senior editor Sharon Machlis asked Frank about his career change and his plans for the site, which partners with restaurants nationwide to offer online ordering of home-delivered meals.

Wants Cybermeals to become "the food network"

CW: Why did you move from a major position in the entertainment industry to heading an Internet start-up such as Cybermeals?

FRANK: I was watching people in the computer world getting features they [originally] had only on [television and televisions offering computer-like features]. In the future, there will be a box that does almost all the features of both.

The world is going to change because people are going to want information, entertainment and commerce in different ways than they did in the past. . . . People are going to start changing the way they live their lives.

I don't know where we're going with this. I just know people are going to be interested in having access to all of it.

CW: What do you plan to do at Cybermeals?

FRANK: Become "the food network." [Offer] everything in and about food: recipes, [getting to know about] chefs, ordering cookbooks, finding out what wine is good and gossip [such as what restaurants are serving at big Academy Award parties]. It's the place to go. And, by the way,

Food Web site, page 46

Smart card pilot takes stab at fickle U.S. market

By Thomas Hoffman

Mark Baumli is a good son. He sent his mother a birthday card on time, and he didn't even have to go to the mall or leave his desk.

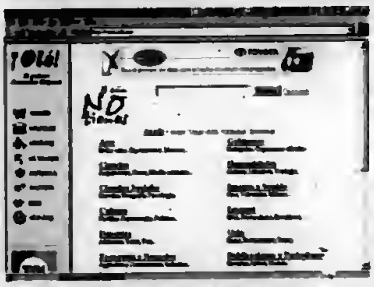
That's because Baumli purchased an electronic birthday card over the Internet from Greeting-cards.com using a Mondex smart card.

Baumli is one of 30 Wells Fargo Bank employees piloting the use of smart cards for electronic-commerce transactions since early last month.

The San Francisco-based bank is hoping that smart cards —

Smart cards, page 46

Europe meets U.S. challenge with portal network



Spanish Ole is the main Spanish-language search engine on the Internet

By Emil Abirascid
MILAN, ITALY

FIVE WEB PORTAL SITES from five European countries have teamed up to build a network strong enough to compete with the portals from the U.S., such as Yahoo and Lycos, that are opening localized sites dedicated to European users.

Virgilio from Italy, Nomade from France, Web.de from Germany, Spanish Ole from Spain and Sol (Scandinavia On Line) from Norway created the AllEurope network to offer better services to users. They also want to share content and technology skills and present an attractive option

Portals, page 46

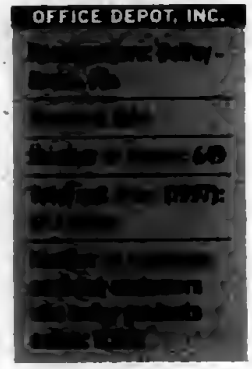
Office Depot

CONTINUED FROM PAGE 45

customized views, said Francis Juliano, director of technology and product development at Officedepot.com.

On the back end, Office Depot programmers had to write the C++ and Visual Basic code to make the connections between Internet Information Server and existing IBM AS/400 order-processing system, where credit-card and address verification, inventory checking and order processing are done.

OFFICE DEPOT, INC.



Because Microsoft Site Server is component-based, developers could choose only the ready-made modules they wanted to use and insert their own custom code — written in C++ and Microsoft's Component Object Model — to integrate with the AS/400 system that communicates with its mainframe databases.

PLATFORM

"The thing about Microsoft's products [is] it's a platform," said Stan Dolberg, an analyst at Forrester Research, Inc. in Cambridge, Mass. "It has some out-of-the-box stuff, but the real benefit is that you can take it on your own terms and extend it."

Office Depot programmers wrote 25 to 30 messages specific to certain tasks to allow communication between Microsoft's Web server and IBM's AS/400.

"If you plan ahead and deliver a tight, small message vs. a large, bloaty thing, you get better performance," Juliano said. That's important in trying to encourage corporate customers to take their business online. Online ordering can reduce the time and cost of order entry, the number of errors made and the amount of unnecessary or multiple deliveries.

"Our size gives us great purchasing power," Luechtefeld said. "But the next step is to really work on reducing the total cost of a customer's order, and we need technology to help automate our processes and continue to drive costs down." □

Starring at food Web site

CONTINUED FROM PAGE 45

if you're hungry, we will deliver food to your house.

CW: Can the company make money that way?

FRANK: I can't think of a bigger niche to be in than food. We are going to figure out how to have three sources of revenue: transaction, advertising and, eventually if it's done right, some type of subscription revenue.

I've had shows canceled after six episodes. I'm going to have little stumbles as I get to the big idea.

CW: With so many sites on the Internet now, how will you get people to come to your site?

FRANK: The same way I got [people] to watch *Home Improvement* instead of *Seinfeld*. I make a better show. [By more closely tying the Web site to the TV channel,] usage leaped. . . . It's the programming. You can never forget that.

CW: How is it different working at an Internet company compared with the entertainment industry?

FRANK: People in the computer business seem to work a lot faster than any business I've ever been involved in.

It's a younger group of people than I'm used to working with. It's much less formal than the entertainment business. More casual in dress and style. It's much more communal. [In the entertainment world], it's a cover-your-ass mentality.

I haven't sat in a meeting all week where someone said, "I can't do that." It's just a different mind-set. It's refreshing for old folk like me. I'm having a good time. □

Rich career path

Richard Frank spent two decades as a top entertainment industry executive, serving as president of Paramount Television Group from 1977 to 1985 (*Cheers*, *Happy Days*), president of Walt Disney Studios from 1985 to 1994 (*The Little Mermaid*, *The Lion King*, *Pretty Woman*) and chairman of Walt Disney Television and Telecommunications from 1994 to 1995.

Disney Studios rose to first place in box-office market share during his tenure, and the company's stock dropped almost 3% the day after his resignation was announced in March 1995. He left to start Comcast Content and Communications, a subsidiary of Comcast Corp. that includes E Entertainment Television.

— Sharon Machlis

Smart cards

CONTINUED FROM PAGE 45

plastic cards that store cash values in an embedded chip — will catch on with consumers who have been reluctant to send their credit-card numbers over the public Internet.

Mondex Internet transactions "seem more secure to me because you're not typing in credit-card numbers," said Baumli, a marketing manager in Wells Fargo's online financial services group and a frequent credit-card-carrying customer at Amazon.com, Inc.

Wells Fargo's Susan Weinstein says the bank hopes to expand the smart card pilot to about 200 employees

CASH TRANSFER

Under Wells Fargo's pilot, Baumli and other employees can swipe their Mondex cards into a card reader and transfer cash value directly from their cards to a merchant's card, said Susan Weinstein, vice president of the bank's online financial services group.

The trial lets them buy online greeting cards (at $2.45 apiece) or Wells Fargo-branded merchandise from Promark (*www.promark.com*). Employees can load cash values onto their cards through a chip-to-chip Internet connection with Wells Fargo. Wells Fargo hopes to expand the pilot to about 200 employees and a few more retailers by the end of this year, Weinstein said.

NO FEES

One of the key business benefits for merchants who use smart cards over the Internet is that there is no processing — and thus, no processing fee — required as with credit cards, said Laila Rubstein, founder of Greeting-cards.com in New York. For consumers, smart-card transactions should be much quicker because there is no waiting for card approval, Rubstein said.

Still, smart-card adoption in the U.S. likely won't rival use in Europe and Japan until multiapplication smart cards become more prominent here, Weinstein said. Such cards might store cash values, personal health care information and loyalty points for retailers such as Starbucks Corp.

For example, Lufthansa German Airlines has a multiapplication card called the Senator. It handles 14 functions, including airline check-in, hotel reservations and car rentals, said Jerome Svigals, an independent consultant in Redwood City, Calif., who has written 17 books on smart cards.

Mondex USA in San Francisco is readying a set of multiapplication cards, or Multos cards, which should be on the market by early next year, a company spokeswoman said. □

Portals

CONTINUED FROM PAGE 45

to companies that plan to advertise online both in one country and across Europe.

"We believe in the importance of local content. Even if the Internet is a global medium, we think users should be able to access local content in their own language," said Gilles Ghesquire, president of AllEurope. "AllEurope was born to offer to European users and to companies online services made by Europeans."

REACHING OUT

Each of the five portal sites is very popular in its home country and is the preferred choice of companies that want to advertise online. Highlights of the sites include the following:

- Nomade (*www.nomade.fr*) is visited 1.5 million times per month and offers links to more than 50,000 French online resources.
- Web.de (*www.web.de*) receives 2.4 million visits each month and is the main directory for German World Wide Web sites. It contains more than 149,000 Web pages and is the site that sells the most online advertising in Germany.
- Virgilio (*www.virgilio.it*) is visited 1.6 million times each month and is the main Internet guide to Italian online resources, with more than 40,000 sites in its directory and 23 theme channels.
- Spanish Ole (*www.ole.es*) receives 2.7 million visits per month. It is the main Spanish-language search engine on the Internet and is dedicated to Spanish-speaking people around the world.
- Sol (*www.sol.no*) is visited 3.6 million times each month and is the first portal for Scandinavian countries. It features the Kvasir search engine. □

Abirascid writes for Computerworld *Italia, a sister publication to* Computerworld *in Italy.*

NEW PRODUCT

INTERACTIVE LEARNING INTERNATIONAL CORP. has announced LearnLinc Version 3.0, Internet-based corporate training software that integrates audio and video.

According to the Troy, N.Y., company, the software offers streaming video, TCP/IP-based audioconferencing and support for desktop videoconferencing products. User-designed virtual campuses enable browser-based access to course catalogs, registration information and both live and self-paced courseware. Online help also is included.

Pricing is $500 to $1,000 per concurrent user.

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COMPUTERWORLD

The Enterprise Network

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Briefs

Platform preferences for E-mail applications

Windows NT	61%
Unix	29%
NetWare	18%
IBM MVS	11%
AS/400	4%
OS/2 LAN Server	4%
OpenVMS	2%

Base: Survey of 886 IS managers (Average budget, $98 million; average workstations, 5,585). Multiple responses allowed.

Source: July 1998 study by the MERIT Project

HP alliance

Anticipating a trend toward hosted messaging services via Internet service providers, Hewlett-Packard Co. last week said it will use Software.com's InterMail product as the messaging application for its high-performance servers in Internet provider environments. The two companies' marketing and services organizations will work together to develop products and services, officials said.

E-mail upgrade

San Francisco-based Innosoft International, Inc. is shipping an enhanced version of its E-mail interconnect product suite. Version 5.2 features improved directory synchronization and message filtering for added protection from unsolicited bulk E-mail. Pricing for the messaging module starts at $2,000. Pricing for the directory module starts at $3,000 per node.

Banks adopt imaging

First Data Corp. subsidiary Integrated Payment Systems, Inc. (IPS) and Michigan National Bank have both implemented software for check imaging and archiving: Electronic Document Warehouse from Mobius Management Systems, Inc. in Rye, N.Y. IPS issues more than $350 billion per year in payment instruments for thousands of financial institutions and retailers across the U.S.

What's your beef?

▸ *Operating system integration, managers say*

By Sharon Gaudin

WHEN CORPORATE information technology managers find themselves worrying about their operating systems on the drive home from work, odds are they are worrying about getting their various systems to cooperate.

"I don't go home worrying about Unix, and not much about Novell. I worry about NT and how they're all going to work together," said Jason McLellan, team leader and senior technical specialist at Grand Rapids, Mich.-based Meijer, Inc., a major retailer with stores in five states. "If there's one thing I could change, it would be to force Microsoft and Novell to work together more. They've taken separate paths for the most part. I wish they'd consider what users need."

For some, features and functions of the operating systems themselves are an issue — the difficulties of clustering, the stability of NT and the difficulty of NT administration.

"I had a server crash last night, and one of the big issues

Operating systems, page 48

Aiden Blyth's Paul Soares

Integration among operating systems is getting better, but it's no cakewalk

UNIFIED MESSAGING

All-in-one systems slow to catch on

By Matt Hamblen

GIVEN THE CHOICE, who wouldn't want to combine all their voice-mail, fax and E-mail messages so they could obtain all of them from one system?

That motivation is behind the market for unified message innovations, which is now 3 years old but is only slowly catching on. Nonetheless, it has brought recent new products from vendors, which include announcements by AVT Corp. and Nortel, Inc. in the past two weeks.

Unified messaging lets a user log on to a PC application that puts on one list all the people who have telephoned, all of the user's E-mail messages and any faxes sent over the Internet.

The latest innovations let a user play voice mail over PC

Messaging, page 48

Unified messaging systems installed, U.S.

1997	9,000 units
1998	15,000 units*
2001	77,000 units*

* Projected

Source: Outsource, San Jose, Calif.

Desktop tools can audit PC BIOS

MARC ANELLO

By Cynthia Bournellis

GETTING YOUR PCs' BIOS to a state of year 2000 readiness may be a challenge, but it doesn't have to be daunting. There are several desktop management software products and individual tools that automatically audit BIOSes, fix date errors, take inventory, generate reports and offer ongoing reporting once the problems are fixed.

In some cases, companies don't need to buy dedicated year 2000 tools. Northern Trust Corp., one of the top seven financial investment firms in the U.S., uses LANDesk Management Suite 6.1 from Intel Corp. to gather data on PC BIOS systems for 7,500 client devices before testing.

Northern Trust uses LANDesk's reporting function to record the BIOS version on each PC and send the information back to a central server, where it is compiled into a report. LANDesk then triggers a separate diagnostic tool to do

PC BIOS, page 48

New switches let users prioritize network traffic

▸ *Compaq heads to policy-based networking*

By Bob Wallace

FOLLOWING IN THE footsteps of the big four networking vendors, Compaq Computer Corp. last week announced a plan designed to let users pick which applications get first priority on the network.

Two new switches, plus a larger switch Compaq already sells, may give users of Compaq's PCs and servers the ability to prioritize applications throughout the network. Internetworking vendors have been working on more comprehensive blueprints that call for that, as well as resource access, security and directories. Compaq is the first PC and server vendor to offer the technology from the workgroup to the data center.

The Gigaswitch/Router — designed as a backbone routing switch — and the MultiSwitch 7000 workgroup switch recognize traffic from particular applications and can give them first shot at available bandwidth, so they can run faster and more

Compaq plan, page 49

Operating systems

CONTINUED FROM PAGE 47

I have with NT is fragmentation of the drive," said Jeff Miller, senior enterprise network engineer at the Chicago Mercantile Exchange. "The longer you have it up, the more frags you get. Administration on NT is a nightmare."

But despite progress by vendors, most corporate IT executives agreed that integration is their biggest headache.

INTEGRATION, SORT OF

Making different operating systems work together has been a long-running issue for Larry Hagerty, group marketing manager at Tampa, Fla.-based GTE Data Services, Inc. "Frankly, integration is a problem," he said. "That's why we standardize on Microsoft products. They integrate well . . . with itself, though."

But William Peterson, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*, said there are more tools than ever to improve integration, but there is no single interface IT managers can use to monitor and administer mixed networks.

He pointed to Novell, Inc. and Microsoft Corp. products — including Novell Directory Services (NDS) on NT, Unix services for NetWare, NT services for NetWare and NetWare services for NT — that were designed to enable users to weave together different aspects of their operating systems.

> "Administration on NT is a nightmare
> — Jeff Miller
> Chicago
> Mercantile Exchange

NDS has the potential to make major inroads in the integration of NT and NetWare by acting as an umbrella directory, incorporating NetWare and NT and giving them one central management point. Brad Anderson, Novell's product manager for NDS, said the company is also working on NDS for various Unix systems.

And though Microsoft has developed several tools, they remain limited in terms of creating one management point for several operating systems.

PLAY NICE

"Microsoft wants to be an enterprise player, and they have historically not played well with others," Peterson said. "If they're going to be taken seriously, they've got to make some moves."

Paul Soares, general manager and vice president of finance at Alden Buick Pontiac GMC in Fairhaven, Mass., said integration is getting better, but it is no cakewalk. Few tools give him one management point where he can make a change and have it trickle down automatically to multiple systems.

"On my big wish list is that the OS/2 environment would have some sort of compatibility with Windows," Soares said. "I hate going back and forth between them. It slows me down. . . . I can go one way, but it's not easy, and they don't communicate well or easily." □

Messaging

CONTINUED FROM PAGE 47

speakers or the handset of a phone and listen to an automated-voice read E-mail with the use of text-to-speech software.

"We use [unified messaging] as a convenience tool," said Mark Mumford, a telecommunications specialist at HNC Software, Inc. in San Diego. "I like how it displays the voice mails [on the interface], and you can page down and see them all and pick the ones you want and file them like a document."

Mumford said HNC, a maker of credit-card fraud detection software, has been beta-testing AVT's CallXpress for Windows NT for several months with several workers, and it eventually might expand to 300 users. AVT, in Kirkland, Wash., began to ship the product Sept. 24, with pricing starting at $15,000.

THAT MEANS A LOT

"The only drawback is once you've listened to a voice mail on a PC, it doesn't automatically delete it from the voice-mail box on the phone system. And as a result, my boss has beaucoup messages," Mumford said.

Analysts acknowledged that unified messaging benefits users, but one said the market isn't catching on. That's mainly because of the great expense of placing a unified messaging software application on top of phone switches throughout a company.

"The market's been hyped, and people have been talking about it a long time, but it's still very small," said Kathleen Dexter, an analyst at Gartner Group, Inc. in San Jose, Calif. "Three years, and we've got all of 9,000-plus systems? I wouldn't call that a booming market.

However, she added, "What we have heard from people who use unified messaging is they love it and wouldn't go back."

Dexter predicted the application will be installed in workgroups in companies, but not enterprisewide because it is too expensive to rip out every E-mail or voice messaging system a company already has installed. Some systems must be installed from the ground up rather than placed on top of systems already in place.

Network manager John Cunnane at Insurance Services Office, Inc. in Pearl River, N.J., said setting up a unified messaging system hasn't been a priority at his company because most of the systems are too expensive and complicated. "Ever since we went for-profit, managers here want to see real dollars returned on a project, not soft dollars that give you 15 minutes of improved productivity a day," he said.

AVT's latest offering is similar to CallPilot, a product announced last week by Nortel in Richardson, Texas, analysts said. Nortel said CallPilot, which adds enhancements to its existing unified messaging product Messenger 4.0, will ship in January, starting at $20,000. Other large companies in the field include Lucent Technologies, Inc. in Warren, N.J., and Active Voice Corp. in Seattle. □

PC BIOS audits

CONTINUED FROM PAGE 47

the actual tests. Once the problem BIOS systems are identified, a small team of contractors combs the appropriate BIOS vendors' World Wide Web sites for the correct BIOS flash upgrades.

Using LANDesk, Northern Trust cut the BIOS data collection process to only three minutes vs. days under the manual regime.

Northern Trust has spent $50,000 on BIOS testing and flash upgrades since March, as opposed to spending $2 million for new tools, said Mike Pollitt, vice president and manager of LAN technology services at the Chicago bank.

Northern Trust had been using LANDesk to manage its PC environment and found that the product's inventorying and reporting function would be valuable in assessing BIOS needs. "With all of the other [year 2000] implementations we have to do in 1998, we couldn't take on another piece of software to do something that we could have done manually," Pollitt said.

The trend to use desktop management tools to address year 2000 BIOS issues has grown during the past six months, according to Rick Villars, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*. "It helps users understand the scope of their projects," Villars said.

LOOKING AHEAD

PC BIOS analysis and remediation is also part of a comprehensive year 2000 project at Fidelity Investments in Merrimack, N.H. With more than 25,000 desktop clients in place, the financial management concern has taken a multipronged approach to dealing with possible BIOS problems.

Fidelity's plans include a vendor assurance program, commercial tools to scan hardware configurations and the retiring of PCs after three years to make sure that "no one has slipped in an old BIOS," said Gary Zimmerman, a year 2000 project leader at Fidelity, during a keynote at last month's Year 2000 Conference and Expo in Burlingame, Calif. Zimmerman wouldn't give further details about the project.

Management products with year 2000 components include TransCentury Office from Platinum Technology, Inc., Enterprise Desktop Management from Novadigm, Inc. and AimIt from Computer Associates, Inc. Microsoft Corp.'s Systems Management Server 2.0 comes with a Microsoft database of applications and their year 2000 compliance levels that lets administrators input new application databases. □

NEW PRODUCTS

IP METRICS SOFTWARE, INC. has announced NIC Express TR, load-balancing software for Token Ring network interface cards (NIC).

The Euless, Texas, company said the software lets users balance network traffic across two or more NICs in a server. If any one NIC fails, the other cards share the redistributed load without loss of data or network connection. One Token Ring NIC provides 16M bit/sec. throughput, but the software was designed to provide up to 29.5M bit/sec. throughput when used with two NICs. NIC Express TR costs $695 per server.

IP Metrics Software
(817) 358-1026
www.ipmetrics.com

ARLOTTO TECHNOLOGIES, INC. has announced the HB-208DBG and HB-216DBG, dual-speed Ethernet hubs for small offices.

According to the Fremont, Calif., company, the HB-208DBG has eight ports, and the HB-216DBG has 16. Each has a built-in bridge function with internal switching that lets users connect 10M bit/sec. and 100M bit/sec. network segments.

The HB-208DBG costs $189, and the HB-216DBG costs $339.

Arlotto Technologies
(888) 988-8908
www.arlotto.com

SYMANTEC CORP. has announced PCTelecommute, productivity and remote access software designed for users who telecommute one to three days per week.

According to the Cupertino, Calif., company, the software enables users to access information from their office PCs using remote control technology from Symantec's PCAnywhere. A DayEnd Sync feature tracks file changes and prompts telecommuters for office-PC file synchronization at the end of the day. An activity log tracks phone calls and faxes, and a PC-based call-screening feature helps control interruptions.

The product costs $99.95.

Symantec
(408) 253-9600
www.symantec.com

California legislation targets spammers

▸ *Backers hope Congress will pass similar legislation*

By Roberta Fusaro

ANTISPAM ACTIVISTS are making headway in California, with legislation approved last week that would help put the kibosh on junk E-mail. Now they hope the laws will be copied nationwide.

California Gov. Pete Wilson signed into law two bills to protect state Internet users and service providers from a flood of unsolicited commercial E-mail

One gives Internet service providers the ability to post and enforce acceptable-use policies that must be followed by its users and outside users who send E-mail to addresses at that host site. The other bill provides for opt-out lists and mandatory tagging of advertisements, so users can filter out spam more easily. Both laws go into effect Jan. 1.

And several weeks ago, a U.S. House Commerce Committee dropped language from another bill, the Consumer Antislamming Act, that would have weakened California's acceptable-use law.

"When you compare the 'spam literacy' when this legislative session began to now, it's a couple of orders of magnitude higher. If nothing else, the education process has been effective," said John C. Mozena, a spokesman for the Coalition Against Unsolicited Commercial E-mail (CAUCE), an online lobbying group in Weed, Calif.

Alan Schwartz, author of the book *Stopping Spam* and an assistant professor of medical education at the University of Illinois at Chicago, said the California laws make the accountability of the spammer part of consumer law and empower Internet providers.

But though the California laws are considered a model by antispam activists, they do face some legal questions. Both may be challenged by the commerce clause of the U.S. Constitution's 14th Amendment, which says that only Congress — not the states — can regulate interstate commerce, said Paul Hoffman, co-chairman of the Internet Mail Consortium, an industry group in Santa Cruz, Calif. Congress is considering legislation similar to the California laws.

The state assembly's "spam literacy" went up "a couple of orders of magnitude" during the current session.
– John C. Mozena, Coalition spokesman

"Now that Washington [state] and California — two major business hubs — have spam laws, it will be interesting to see if it makes a difference" in the rate of bulk-mailing via E-mail, Mozena said.

"Congress will need to review spam issues in the future but will be more in tune with the needs of the Internet community," said Ray Everett-Church, a CAUCE co-founder.

Despite success with the California laws, antispam activists aren't pausing from their efforts. Two weeks ago, they held a spam roundtable in Santa Barbara, Calif., to mobilize Internet industry leaders.

Some of the key issues cited at the event were the role of U.S. spam laws in governing unsolicited E-mail from overseas, attendees said, and new ways of structuring Internet service provider contracts away from the unlimited pricing model that makes it easy to use the Internet for direct mailing. More than 40 Internet service providers and spam fighters attended.

"Most programs look at [the spam issue] from a public policy approach or from an academic or legal approach," Everett-Church said. "This was coming out from the industry — from the folks on the front lines of the problem." □

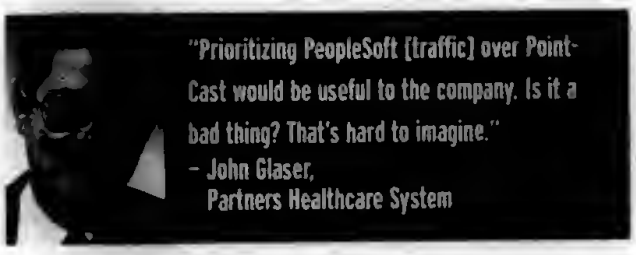
Compaq plan

CONTINUED FROM PAGE 47

reliably. Both are manufactured by Cabletron Systems, Inc. and resold by Compaq. The Houston company already resells an Extreme Networks, Inc., product called the Compaq SW5450 Gigabit Ethernet switch, which can sit in a data center or in front of a server farm to handle very heavy traffic and assign bandwidth into any vendor's servers.

tion and addressing problems.

One temporary drawback for companies is that they will need one package to set priorities for the newly added Gigaswitch/Router and another for Compaq's existing Gigabit Ethernet switch. Some time next year, the vendor will release a single offering for all three, according to a Compaq official.



"Prioritizing PeopleSoft over PointCast would be useful to the company," said John Glaser, chief information officer at Partners Healthcare System in Boston. "Is it a bad thing? That's hard to imagine." Partners comprises several hospitals, including one that uses Compaq servers. The scheme works with other vendors' servers.

Because the products each support the priorities, traffic prioritization can be done from the desktop to the data center server. But some older Compaq networking equipment doesn't support prioritization.

"This is a great idea because it allows you to favor certain applications based on the level of criticality to your business," said Paul Tinerello, CIO at insurance rating agency A. M. Best Co. in Oldwick, N.J. But, he added, users should watch their networks for congestion and addressing problems.

POLICY-BASED NETWORKING

The three products represent Compaq's start down the long path to policy-based networking, in which networking equipment would enforce rules set by companies on how their networks should be used, from which application gets most bandwidth to what resources each user can access. Compaq trails behind Cisco Systems, Inc., 3Com Corp., Bay Networks, Inc. and Cabletron in that area, but no one has reached the goal, said Michael Howard, principal analyst at Infonetics Research, Inc. in San Jose, Calif.

But one user isn't waiting for Compaq's full-blown policy-based networking.

Ken Clipperton, managing director of university information services at Buena Vista University in Storm Lake, Iowa, plans to use the switches to stream video. "On one side, we want to to make sure people get smooth video. But on the the other hand, we have to put a maximum bandwidth ceiling on the video to keep it from sapping all the bandwidth on the network," he said. □

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B. Paid and/or requested circulation		
1. Sales through dealers and carriers, street vendors and counter sales	None	None
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C. Total paid and/or requested circulation	198,703	221,181
D. Free distribution by mail, carrier or other means, samples, complimentary and other free copies	15,328	16,893
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G. Total distribution (Sum of C and F)	214,031	238,074
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1. Office use, left over, unaccounted, spoiled after printing	1,122	650
2. Returns from news agents	None	None
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Software

Databases • Development • Operating Systems

Briefs

ATTRACTING USERS

The fastest-growing packaged application vendors in the first half of the year:

Vendor	Revenue growth
Industrial and Financial Systems	89%
Platinum Software	81%
PeopleSoft	77%
SAP AG	63%
Symis	56%
Intentia	49%
Mapics	49%
J. D. Edwards	46%
Total year-to-year market growth: 44%, to $6.77B	

Source: AMR Research, Inc., Boston

Sun adds to Java tools

Sun Microsystems, Inc. has made available several Java tools: the Infobus 1.1.0 application programming interface that lets Java-based components or applications exchange information regardless of the source, a beta version of its three-dimensional Java application programming interface and the 1.0 beta of its pure PC software-based PCI (and higher) bus network component.

Reports from the Web

Lenexa Software, Inc. has made released a set of browser-based tools aimed at business users who need to build customized reports, charts and data-entry forms for its financial and human resources applications. The new Application Designer tools software runs in World Wide Web browsers. Pricing starts at $9,000.

Java outsourcing

[illegible]

OpenVMS gets Compaq nod

▸ *Upcoming Galaxy release shows commitment to core DEC technology*

By Jaikumar Vijayan

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Compaq will unveil the much-anticipated Galaxy Software Architecture for OpenVMS at the Digital Equipment Computer Users Society (DECUS) conference in Los Angeles.

The technology promises to increase the scalability of OpenVMS servers and will be offered as an option with the latest release of OpenVMS, Version 7.2, which Compaq will also announce at DECUS. There are an estimated 75,000 users of OpenVMS, according to Terry Shannon, editor of "Shannon Knows Distributed Enterprise Computing," a newsletter in Ashland, Mass.

"My real interest is in seeing how [this technology] will evolve"

Galaxy is as much an indication of Compaq's commitment to OpenVMS as it is a technology enhancement, said Joseph Pollizzi, former president of DECUS and deputy head of the science and engineering systems division at the Space Telescope Science Institute in Baltimore.

Since Compaq bought Digital earlier this year, users have been concerned about the company's commitment to such core Digital technologies as OpenVMS and Alpha, given their meager market shares. Compaq has repeatedly stressed that it remains fully committed to supporting those technologies. Digital has been talking about the Galaxy technology for at least 18 months now.

"I think it is a very strong statement of support [for VMS] on Compaq's part," Pollizzi said. "People are very excited about Galaxy. . . . I think the general expectation is that it will allow [users] to scale their re-

Compaq, page 56

Natural-language query tool works for occasional users

By Stewart Deck

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So Ferguson turned to Linguistic Technology Corp. in Littleton, Mass., and its English Wizard natural-language query tool. Sales reps can now dial in to the company's network, type in their questions and receive answers in minutes.

Analysts warn that this type of tool is useful for simple, straightforward queries but isn't a panacea. "This isn't a way to write standard reports," said Frank Gillett, an analyst at Forrester Research, Inc. in Cambridge, Mass. "This is a way to provide easy access for simple ad hoc queries to occasional or unsophisticated users."

Query tool, page 54

• HR management

Siemens cuts PeopleSoft loose for SAP

By Bernd Seidel and Craig Stedman
MUNICH

AFTER NEARLY four years and an investment of $59.1 million in PeopleSoft, Inc. human resources software, Siemens AG in Germany has decided to stop the project and go with SAP AG instead, Siemens confirmed.

Siemens' subsidiaries outside of Germany, which already had implemented PeopleSoft's human resources software, must now build an interface to SAP's human resources module at their own cost.

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Now, a letter from Siemens' personnel director has con-

Siemens, page 54

Leasing company bridges platform gap

By David Orenstein

COMPANIES THAT NEED to link applications on Unix, Windows NT and other platforms are hearing from analysts that Java and object transaction monitors aren't mature enough to provide an infrastructure. Yet companies such as Advanta Business Systems (ABS) have handled those needs for years by using existing programming tools to overcome the interoperation complexity.

The innards of the leasing applications at ABS, a financial services provider in Voorhees, N.J., are on Unix. But the com-

Leasing company, page 54

Advanta Business Systems' software development team: (front row, from left) Chris Fani, Robin Steven, Sam Younan; (back row, from left) Anthony Buono, Alex Pyateskiy, Mark Pfeifer and James Krzeszowski, director of software development

Software

Databases • Development • Operating Systems

Briefs

ATTRACTING USERS

The fastest-growing packaged application vendors in the first half of the year:

Vendor	Revenue growth
Industrial and Financial Systems	89%
Platinum Software	81%
PeopleSoft	77%
SAP AG	63%
Symix	56%
Intentia	49%
Mepics	49%
J. D. Edwards	46%
Total year-to-year market growth: 44%, to $6.77B	

Source: AMR Research, Inc., Boston

Sun adds to Java tools

Sun Microsystems, Inc. has made available several Java tools: the InfoBus 1.1.1 application programming interface that lets JavaBeans components or applications exchange information regardless of the source, a beta version of its three-dimensional Java application programming interface and the fifth beta of its Java PC software product that can convert 486-based PCs (and higher) into network computers.

Reports over the Web

Lawson Software, Inc. last week released a set of Internet-based tools aimed at business users who want to build customized reports, charts and data-entry forms for its financial and human resources applications. The new Application Designer Suite software runs in World Wide Web browsers. Pricing starts at $150,000.

Baan outsourcing

The Baan Co. last week announced application outsourcing services available through Baan Midmarket Solutions, a joint venture set up to sell the Dutch company's packaged business software to small and midsize customers.

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Query tool a natural

CONTINUED FROM PAGE 53

SQL is a fundamental barrier to complex translated questions, said Richard Finkelstein, a database consultant and president of Performance Computing, Inc. in Chicago.

"The kind of simple queries [these tools] can do are better off done using simpler user interfaces instead of figuring out which precise English phrase to use," Finkelstein said.

VENDORS RESPOND

But some large database vendors see some usefulness in natural-language query tools. IBM will soon announce an agreement with Linguistic Technology to co-market English Wizard for its DB2 Universal Database. Similarly, Sybase, Inc. is packaging it along with its database offerings. Microsoft Corp. and Oracle Corp. both support a variety of natural-language querying tools.

James McGlaughlin, a systems analyst at farm equipment maker Deere & Co. in Deerfield, Ill., said English Wizard helps his information systems staff reduce the time it takes to develop customized queries for the firm's DB2 data warehouse.

Deere stores its human resources information in the warehouse, and company executives had been using a scripted Sybase PowerBuilder application to access it for human resources trends. If a new query wasn't on the menu, a programmer would have to cobble together new options for the application.

Deere turned to English Wizard to put the queries in the hands of people who need the information. "Now they don't have to rely on programmers for mission-critical things like researching salary schedules, hiring quotas or recruiting efforts," McGlaughlin said. □

CAN WE GET THAT IN ENGLISH?

An example of an English query vs. one in SQL language:

English
"Show all the repeat episodes that have aired for Coach"

SQL

```
SELECT DISTINCT "sEPTitle" as "episode title",
"AlRing"."dtARActualAirDate" as "actual air date"

FROM "EPisode", "AlRing", "ProGram"

WHERE (exists(SELECT * FROM "PrevAiring", "AlRing"
WHERE
"EPisode"."nEPNumber"="AlRing"."nEPNumber" and
"PrevAiring"."nEPNumber"="AlRing"."nEPNumber" and
"PrevAiring"."dtARActualAirDate"< "AlRing"."dtARAirDate") and
"AlRing"."dtARActualAirDate" is not NULL and
"sPGName"='Coach') and
"EPisode"."nEPNumber"="AlRing"."nEPNumber" and
"ProGram"."nPGNumber"="EPisode"."nPGNumber"
```

Note: The word "repeat" implies a self-join in addition to a subquery

Source: Linguistic Technology Inc., Littleton, Mass.

Siemens will switch

CONTINUED FROM PAGE 53

firmed that the deal is off.

Howard Gwin, senior vice president of international operations at PeopleSoft, said Siemens decided to switch to SAP in Germany after several months of talks. The discussions started when PeopleSoft delayed shipments of payroll software for Germany and other European countries.

The European payroll module was supposed to ship in June with the vendor's PeopleSoft 7.5 application upgrade but now isn't due until the next release, Gwin said. "We think we've got it figured out now, but we thought we'd be there earlier, and we weren't," he said.

EUROPEAN CUSTOMERS

Siemens was "an important customer when we signed them, but I think we're over the start-up mentality in Europe now," Gwin added. He said PeopleSoft has a total of about 400 European customers that are either using or installing its software, including human resources systems at Germany's national bank and railroad.

A McKinsey & Co. study contributed to the painful decision to drop PeopleSoft, according to industry sources. Siemens hired the consultants earlier this year to determine what changes would result from its latest restructuring and to see whether PeopleSoft's human resources software covered its changing needs.

The project was halted "for cost reasons," and continuing it would have simply proved too expensive, Siemens spokesman Martin Siebert said. The electronics concern, based here, has already invested about 100 million marks ($59.1 million) in PeopleSoft's HRMS, he said. Siemens' subsidiaries outside Germany don't have to switch to SAP, however. If they choose to stay with PeopleSoft, they must build an interface to the SAP human resources module used at Siemens headquarters here, Siemens said.

PeopleSoft's payroll offering — which was jointly developed by PeopleSoft and Siemens for use at the company — is already in broad use at Siemens, said Uli Lindner, head of PeopleSoft Deutschland GmbH. The software handles between 10,000 and 12,000 payroll records. But industry insiders have long whispered that there were problems with the PeopleSoft/Siemens project. German payroll systems are much more complex than their U.S. counterparts, they note, and PeopleSoft apparently underestimated the enormity of the task.

OVERLOAD

About 70% of all requirements and laws in the personnel field come from Germany, according to one industry estimate. The PeopleSoft software simply can't handle all those requirements technically. At a company as large as Siemens, the payroll system is so complex — governed by more than 1,000 different salary and labor agreements — that no one software program can cover it all.

The blame doesn't lay solely on PeopleSoft's shoulders: Siemens isn't an easy customer, observers said. Not only is it large and diffuse, but restructurings also are a frequent occurrence at the electronics giant. □

Seidel writes for Computerwoche, *a* Computerworld *affiliate in Germany.*

Leasing company bridges platform gap

CONTINUED FROM PAGE 53

pany has hooked in myriad third-party applications on Windows NT, relies heavily on messaging and recently extended the application to the World Wide Web to more efficiently serve its leasing broker customers, said Jim Krzeszowski, ABS's director of software development. The company's managed lease portfolio totaled $595 million at the end of last year.

The development tools and server-side infrastructure holding the ABS applications together are from Oakland, Calif.-based Forte Software, Inc.

HELPS HEADACHES

Like competitors Dynasty Technologies, Inc. in Redwood Shores, Calif., Compuware Corp. in Farmington Hills, Mich., and SuperNova, Inc. in New York, Forte suppresses platform and middleware headaches.

"[Forte's software] is much easier when compared to using a combination of C or C++ and [BEA Systems, Inc.'s] Tuxedo," Krzeszowski said. "Message-oriented middleware is integrated into Forte." (See Quick-Study, page 89.)

It took two developers three months of part-time effort to build the basic Web presence needed to end ABS's days of receiving faxed lease applications, Krzeszowski said. After another six months of fine-tuning and improvements, the Web site for the Advanced Credit Entry System was launched in May.

Behind the scenes, Forte's server objects let ABS's Unix-based application interface with an NT-based credit information and scoring application.

At the same time, Forte server objects route messages of lease approvals and denials to a fax server using a wrapper program written in C.

The Alameda County, Calif., court system also uses Forte tools and servers for a system that will eventually help workers manage everything from collecting fees and generating forms to keeping the real-time minutes of courtroom proceedings,

said Ciello Keller, information systems director at the court system.

The core of the applications resides on a Hewlett-Packard Co. HP 9000 server, but it ties together Windows 95 clients, an NT file-and-print server and an RS/6000 server for imaging applications.

The core system will encompass civil, traffic and criminal courts in several of the county's cities, including Oakland. It has grown in scale as it has moved from NT to a Sequent Computer Systems, Inc. system to the HP 9000.

PROMISES, PROMISES

Strong cross-platform interoperability is a key part of the promise of Java; those expectations have hurt Forte and its rivals, said John Rymer, an analyst at Upstream Consulting in Emeryville, Calif. But Java has yet to deliver on its promise — especially with vendors still working out a number of server-side standards, Rymer said [CW, Sept. 28]. "If you want to do everything in Java, good luck," he said.

But Dave Kelly, an analyst at Hurwitz Group, Inc. in Framingham, Mass., said that as open standards of languages and middleware become more appealing, Forte may be dropped because it is viewed as proprietary — even though it announced last month that it has licensed Sun Microsystems, Inc.'s Java tools. □

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Compaq is committed to OpenVMS

CONTINUED FROM PAGE 53

sources to meet application needs." Initially, Galaxy will be supported on Digital's AlphaServer 8400 and the midrange 4100 products.

"Essentially, I think Galaxy is going to be a real high-end thing for the moment," said Rob Young, a longtime VMS user and a consultant at Data Systems, Inc. in Wilmington, Del. "My real interest is in seeing how this [technology] will evolve" during the next few years to include support for Windows NT or for fault-tolerant capabilities such as hot-swapping CPUs, Young said.

Galaxy basically allows OpenVMS users to partition a single large VMS server into multiple smaller servers — or nodes — each running its own copy of OpenVMS and communicating with the others via a shared memory pool.

For instance, a 32-processor VMS server can be partitioned into four eight-processor nodes or eight four-processor nodes within the same box. Each node or group of nodes can be assigned to run different applications.

Galaxy features a so-called dynamic reconfiguration capability that allows the server to adapt quickly to changing application needs. For instance, the technology is capable of automatically assigning additional processors to run a particular application if there is a sudden demand for increased processing power.

Such capabilities are crucial for users running large, fast-growing applications such as Internet hosting, online transaction processing and data warehousing applications on OpenVMS, Shannon said.

Galaxy's partitioning capabilities also enable users to take applications running on multiple servers and consolidate them on a single box for better management, Shannon said.

"Galaxy brings the ability to better exploit large [symmetrical multiprocessing] systems," he said. "It is the biggest enhancement [to OpenVMS] since the introduction of clustering 15 years ago." □

Why VERITAS NetBackup?

Y2K!

NEW PRODUCTS

NETPRO COMPUTING, INC. has announced Config Central 3.0, software that automates the distribution of NetWare patches from Novell, Inc.

According to the Scottsdale, Ariz., company, the software lets users scan all NetWare Loadable Modules (NLM) in their 3.12, 3.a and 4.x networks and make comparisons to a single NLM reference. It can then distribute NetWare Support Packs to multiple servers immediately or at prescheduled times when the servers aren't busy.

Config Central 3.0 costs $249 per server.

NetPro Computing
(602) 941-3600
www.netpro.com

STARBASE CORP. has announced StarTeam 2000, program-management software for documenting and reporting on year-2000 compliance projects.

According to the Irvine, Calif., company, the compliance tracking software maintains project audit trails in a central SQL database called a Repository of Record (ROR). The ROR was designed to help protect companies against legal liability if year 2000 problems occur. When integrated with StarBase's StarTeam software configuration management software, it will allow distributed teams to remotely interact with the ROR.

Pricing begins at $20,000 for a base client/server configuration.

StarBase
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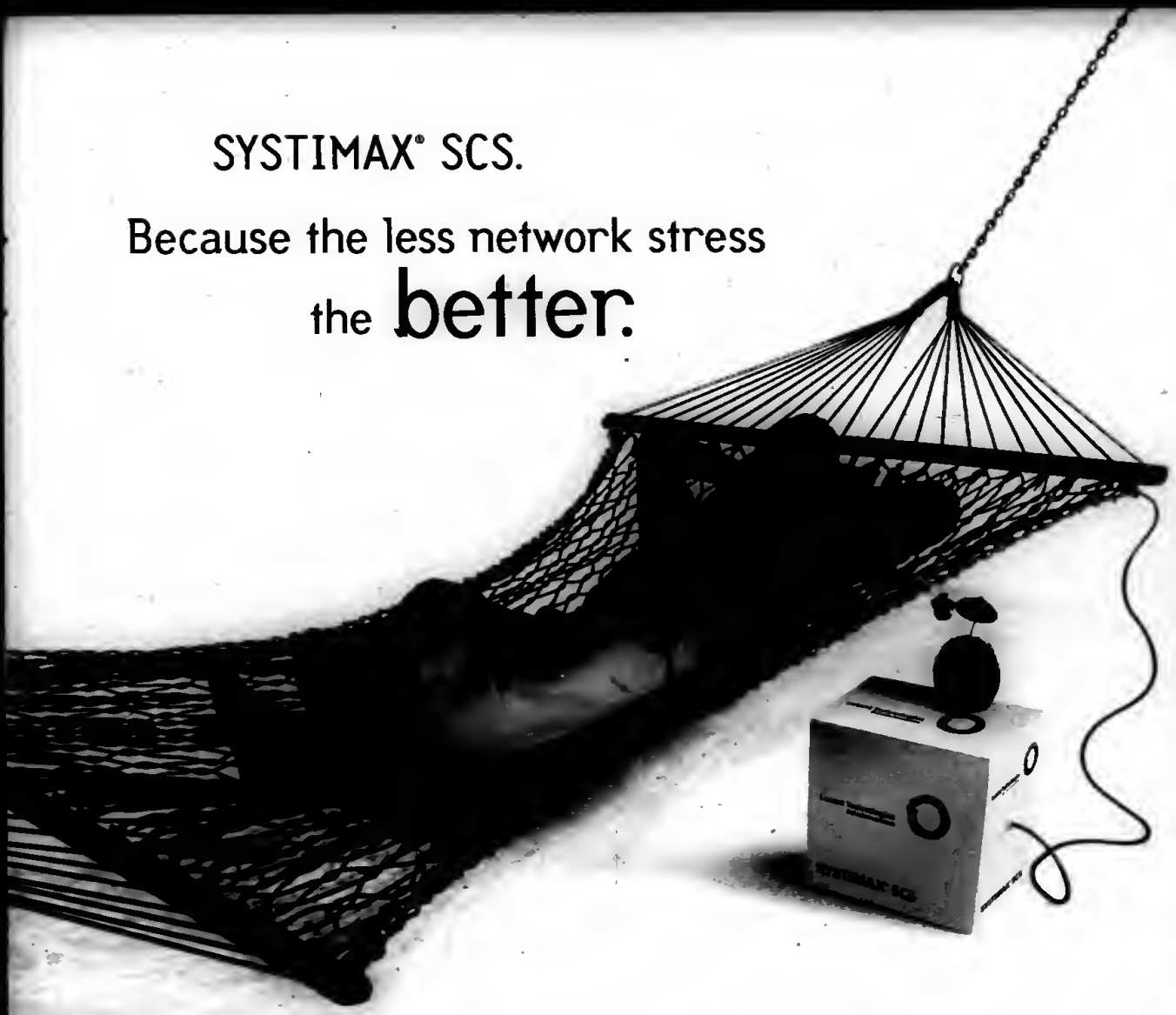
www.starbase.com



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Briefs

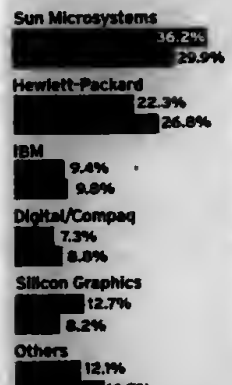
Sony monitors

Sony Electronics, Inc.'s Graphics Display Group plans to unveil this month a line of monitors based on its new FD Trinitron technology, which allows nearly flat displays. The Tokyo company will use the technology in high-definition television and in monitors for graphics professionals and presentations.

Picture CD effort

Intel Corp. in Santa Clara, Calif., and Eastman Kodak Co. in Rochester, N.Y., have introduced a CD-ROM product and service designed to let people who don't have digital cameras transform their photos into digital images that can be manipulated on computers. Intel and Kodak are testing Picture CD in Salt Lake City and Indianapolis. Like Kodak's earlier Photo CD, Picture CD uses service bureaus to convert film images to a CD-based digital format, but Picture CD includes retouching software for Windows (a Macintosh version will come later) that can be run on Macs. Processing will cost $10 more than standard processing.

Worldwide workstation market share



Total Q2 revenue: $3.2B in 1997, $3.1B in 1998

Source: Dataquest, San Jose, Calif.

A sampling of Windows NT workstation prices

System	Memory	Disk	Base graphics	Price
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HP Kayak XU	128M bytes	9.1G bytes	[illegible]	$3,495
Compaq AP200	128M bytes	4.3G bytes	ELSA Gloria Synergy+	$2,983

Source: D. H. Brown Associates, Inc., Port Chester, N.Y.

Workstation deals abound

▸ *Unix, NT competition fuels cuts of up to 50%*

By Jaikumar Vijayan

IT'S A GOOD TIME to shop for workstations.

Falling component prices and a battle for market share among vendors of Unix and Windows NT workstations are contributing to a pricing free fall that shows little sign of slowing. And if users can wait a little longer, the deals could get even better — especially on Unix workstations — during the next six months, said Greg Weiss, an analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y.

That's because most of the major vendors, including IBM, Sun Microsystems, Inc., Silicon Graphics, Inc. and Hewlett-Packard Co., are poised to overhaul their workstation families during the next few months. "The idea is to buy at the beginning of a life cycle rather than at the end" to get the best price/performance deals, Weiss said. An upcoming report on the workstation market from Dataquest in San Jose, Calif., shows that, worldwide, workstation shipments grew more than 48%, to 355,920 units, in the second quarter of this year compared with the same quarter last year. Yet revenue fell 3.2% during the same period because of falling prices, the report said (CW, Sept. 28).

"Technology has improved dramatically."

– Gary Davis, Animation House

"Overall, workstation technology has improved dramatically, so you'd be getting more bang for the buck even if prices had remained the same," said Gary Davis, president of Animation House, Inc., an animation studio in Evansville, Ind. "But I think it is displaying a fair grasp

Workstations, page 60

Tape RAID a less pricey option

▸ *May perform faster, too, analyst says*

By Nancy Dillon

AS BACKUP WINDOWS shrink and critical data grows, most users are hunting for ways to improve upon the basic tape hardware/backup software means of data protection.

Expensive — and often proprietary — options such as failover systems and remote-copy software exist. But what if you don't have tens of thousands of dollars to spend?

Some vendors hope you will take a look at tape RAID.

Tape RAID allows the logical linking of multiple SCSI tape drives in one array, which appears as a single logical device on the network. It lets users set up striping, mirroring or striping-with-parity across the drives (see chart). Today, tape RAID is generally software-based.

"My guess is that as NT becomes more enterprise-scalable, [tape RAID] will be something that buyers want," said Philip Mendoza, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*. "It's a pretty safe bet that it will give you better performance."

But Gerry Reed isn't so sure. "In a way, I think it's overkill," said the network engineer at Engelhard Corp., an Iselin, N.J.-based maker of specialty chemical products. Reed said that when he thinks of RAID, he thinks of improved reliability,

Tape RAID, page 60

Uses of tape RAID

Level 0	Simultaneously stripes data across multiple stand-alone drives. Offers highest throughput but no guard against failure.
Level 1	Exact copy of each tape's backup job stored on another tape; also known as mirroring or shadowing. Provides maximum fault tolerance but doubles drive and cartridge expenditures.
Level 3	Striping with a dedicated parity drive. Provides high performance with fault tolerance because data on failed drives can be reconstructed using parity information.
Level 5	Data, with its parity information, is striped across multiple tape drives. Can withstand single drive failure but degrades write performance.

Citrix adds more Unix support

By April Jacobs

CITRIX SYSTEMS, INC. has released a new version of its MetaFrame product designed to help Windows Terminal Server users run two more versions of Unix.

The product, which is available as a stand-alone thin-client server, also ships with Windows Terminal Server, giving it Unix support. Windows Terminal Server previously supported only applications designed to run on Windows NT. MetaFrame now supports Linux and The Santa Cruz Operation, Inc.'s (SCO) version of Unix.

Thin-client servers were designed to connect thin clients or PCs to legacy applications to avoid migrating those applications to newer platforms. They also reduce administration costs by keeping most of the software on the server, where information technology staffers can get to it easily.

SCO versions of Unix, which run on Intel Corp. hardware, accounted for 40% of all Unix shipments last year, according to Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*.

Beverly Russell, chief information officer at Toronto-based E. D. Smith, Inc., said thin clients also offer the ability to access applications on many types of servers. That is important to companies that don't want to throw out existing systems to gain access to new applications.

"Having the ability to get access to all the pieces of software you need through a single client is a big deal," Smith said.

"What Citrix is doing is saying they are going to allow users to have access to whatever clients they have today. And much to Microsoft's chagrin, there are still a lot of Unix clients out there with production applications that just aren't going to go away," said John Dunkle, an analyst at Portsmouth, N.H.-based Workgroup Strategic Services, Inc. □

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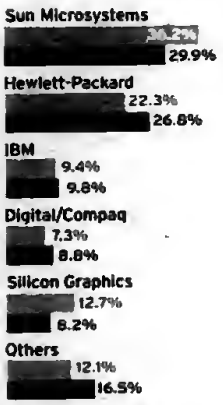
Sony Electronics, Inc.'s Graphics Display Group plans to unveil this month a line of monitors based on its new FD Trinitron technology, which allows nearly flat displays. The Tokyo company will use the technology in high-definition televisions and in monitors for graphics professionals and presentations.

Picture CD effort

Intel Corp. in Santa Clara, Calif., and Eastman Kodak Co. in Rochester, N.Y., have introduced a CD-ROM product and service designed to let people who don't have digital cameras transform their photos into digitized images that can be manipulated on computers. Intel and Kodak are testing Picture CD in Salt Lake City and Indianapolis. Like Kodak's earlier Photo CD, Picture CD uses service bureaus to convert film images to a CD-based digital format, but Picture CD includes retouching software for Windows (a Macintosh version will come later) that can be run on kiosks. Processing will cost $10 more than standard processing.

Worldwide workstation market share



Total Q2 revenue: $3.2B in 1997, $3.1B in 1998

Source: Dataquest, San Jose, Calif.

A sampling of Windows NT workstation prices:

System	Memory	Disk	Base graphics	Price
Dell Precision 410	128M bytes	9.1G bytes	Permedia2 8M-byte SRAM	$3,790
HP Kayak XU	128M bytes	9.1G bytes	Matrox Millennium G200	$3,616
Compaq AP200	128M bytes	4.3G bytes	ELSA Gloria Synergy+	$2,983

Source: D. H. Brown Associates, Inc., Port Chester, N.Y.

Workstation deals abound

▸ *Unix, NT competition fuels cuts of up to 50%*

By Jaikumar Vijayan

IT'S A GOOD TIME to shop for workstations.

Falling component prices and a battle for market share among vendors of Unix and Windows NT workstations are contributing to a pricing free fall that shows little sign of slowing. And if users can wait a little longer, the deals could get even better — especially on Unix workstations — during the next six months, said Greg Weiss, an analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y.

That's because most of the major vendors, including IBM, Sun Microsystems, Inc., Silicon Graphics, Inc. and Hewlett-Packard Co., are poised to overhaul their workstation families during the next few months. "The idea is to buy at the beginning of a life cycle rather than at the end" to get the best price/performance deals, Weiss said. An upcoming report on the workstation market from Dataquest in San Jose, Calif., shows that, worldwide, workstation shipments grew more than 48%, to 355,920 units, in the second quarter of this year compared with the same quarter last year. Yet revenue fell 3.2% during the same period because of falling prices, the report said (CW, Sept. 28).

"Technology has improved dramatically."

– Gary Davis, Animation House

"Overall, workstation technology has improved dramatically, so you'd be getting more bang for the buck even if prices had remained the same," said Gary Davis, president of Animation House, Inc., an animation studio in Evansville, Ind. "But I think it is displaying a fair grasp

Workstations, page 60

Tape RAID a less pricey option

▸ *May perform faster, too, analyst says*

By Nancy Dillon

AS BACKUP WINDOWS shrink and critical data grows, most users are hunting for ways to improve upon the basic tape hardware/backup software means of data protection.

Expensive — and often proprietary — options such as failover systems and remote-copy software exist. But what if you don't have tens of thousands of dollars to spend?

Some vendors hope you will take a look at tape RAID.

Tape RAID allows the logical linking of multiple SCSI tape drives in one array, which appears as a single logical device on the network. It lets users set up striping, mirroring or striping-with-parity across the drives (see chart). Today, tape RAID is generally software-based.

"My guess is that as NT becomes more enterprise-scalable, [tape RAID] will be something that buyers want," said Philip Mendoza, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*. "It's a pretty safe bet that it will give you better performance."

But Gerry Reed isn't so sure. "In a way, I think it's overkill," said the network engineer at Engelhard Corp., an Iselin, N.J.-based maker of specialty chemical products. Reed said that when he thinks of RAID, he thinks of improved reliability.

Tape RAID, page 60

Uses of tape RAID

Level 0	Simultaneously stripes data across multiple stand-alone drives. Offers highest throughput but no guard against failure.
Level 1	Exact copy of each tape's backup job stored on another tape; also known as mirroring or shadowing. Provides maximum fault tolerance but doubles drive and cartridge expenditures.
Level 3	Striping with a dedicated parity drive. Provides high performance with fault tolerance because data on failed drives can be reconstructed using parity information.
Level 5	Data, with its parity information, is striped across multiple tape drives. Can withstand single drive failure but degrades write performance.

Citrix adds more Unix support

By April Jacobs

CITRIX SYSTEMS, INC. has released a new version of its MetaFrame product designed to help Windows Terminal Server users run two more versions of Unix.

The product, which is available as a stand-alone thin-client server, also ships with Windows Terminal Server, giving it Unix support. Windows Terminal Server previously supported only applications designed to run on Windows NT. MetaFrame now supports Linux and The Santa Cruz Operation, Inc.'s (SCO) version of Unix.

Thin-client servers were designed to connect thin clients or PCs to legacy applications to avoid migrating those applications to newer platforms. They also reduce administration costs by keeping most of the software on the server, where information technology staffers can get to it easily.

SCO versions of Unix, which run on Intel Corp. hardware, accounted for 40% of all Unix shipments last year, according to Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*.

Beverly Russell, chief information officer at Toronto-based E. D. Smith, Inc., said thin clients also offer the ability to access applications on many types of servers. That is important to companies that don't want to throw out existing systems to gain access to new applications.

"Having the ability to get access to all the pieces of software you need through a single client is a big deal," Smith said.

"What Citrix is doing is saying they are going to allow users to have access to whatever clients they have today. And much to Microsoft's chagrin, there are still a lot of Unix clients out there with production applications that just aren't going to go away," said John Dunkle, an analyst at Portsmouth, N.H.-based Workgroup Strategic Services, Inc. □

Workstations

CONTINUED FROM PAGE 59

of the obvious to say that prices overall have gone down dramatically."

Price drops on Unix systems in particular have been impressive: an average of more than 50% on some configurations during the past year, Weiss said. Systems that used to sell for more than $20,000 are available now for less than half that price. For that kind of money, a user is likely to get a minimum of 64M bytes of RAM, 4G bytes of hard-disk space, base-level three-dimensional graphics capabilities and a monitor. Such machines are typically aimed at low-end engineering design applications, as are NT workstations.

Most of the price reductions are being driven by Wintel workstations, which last quarter accounted for more than 54% of all workstation sales worldwide, compared with Unix's 46%, according to Dataquest.

Superfast Intel chips, NT applications and low-cost components allow vendors to build workstations that offer nearly the same level of performance as much more expensive Unix boxes. Because of that, vendors such as Compaq Computer Corp., HP and Dell Computer Corp. can deliver workstations for as low as $3,600 (see chart), though well-configured systems still can cost more than $6,000.

Unix workstation vendors such as Sun and Silicon Graphics have responded by delivering low-cost, basic Unix boxes. Sun's Darwin workstations, for example, debuted early this year costing less than $5,000, while SGI's O2 workstations are available for less than $6,000. □

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Tape RAID

CONTINUED FROM PAGE 59

and "unless you have tape that's really old, [tape is] generally pretty reliable."

Brian Pace, a systems administrator at the University of California at Berkeley, hasn't tested tape RAID but said he is more open to the idea. He uses backup software from Seagate Software, and Seagate last week announced tape RAID software called Seagate RAIDirector.

"It sounds great if the price is reasonable," Pace said. He currently backs up about 40G bytes from 15 Windows NT servers to one 24G-byte digital audio tape (DAT) drive.

SEEKING PROTECTION

The one DAT drive "is a single point of failure. And it requires a tape change halfway through my 18-hour backup process," Pace said. "If I added three more of the same DAT drives and set it up in RAID, I could maybe get faster throughput and some failure protection."

Seagate's RAIDirector costs $995. It allows up to eight drives per array and supports digital linear tape (DLT), DAT and 8mm tape devices. Seagate's backup rival, Computer Associates International, Inc., introduced tape RAID last year with Version 6.5 of its backup product, ARCserve.

Michael Warchut, a systems administrator at book broker Alibris, Inc. in Emeryville, Calif., has been using tape RAID with ARCserve for several months. He backs up 90G bytes of Windows NT accounting and billing data to four 4mm tape drives set up in a mirroring configuration.

"The mirroring lets us create two identical tapes at once," Warchut said. "We take one of the tapes off-site, and we leave one copy on-site, in case of a disaster." He said that with mirrored tape copies, he has a safe, off-site copy, but he added that he also doesn't have to wait for a tape to arrive in the event of an isolated system failure.

On the hardware side, Redmond, Wash.-based Advanced Digital Information Corp. (ADIC) is expected to announce this week a DLT tape array that is optimized for tape RAID. Called the Tape Array 5, the device offers five drives in a standard 19-in. rack space and has optional RAID Level 1 software as well as support for the Seagate and Computer Associates tape RAID products.

The ADIC array costs $2,650 for the enclosure and between $3,595 and $6,895 for each DLT drive. □

Managing

THE MILLENNIUM'S SUPERSTARS

YEAR 2000 PROJECT MANAGERS ARE WORTH THEIR WEIGHT IN GOLD. HOW DO YOU KEEP THEM?

By Kathleen Melymuka

The year 2000 retention drama is playing out differently from what was expected. The widely anticipated programmer shortage never quite materialized, but another shortage has proved far more dangerous.

"We'd always heard the industry speak of demand for programmers, but the more critical and unexpected demand is for project managers," says Irene Dec, vice president of information systems at The Prudential Insurance Company of America in Newark, N.J.

"Those are the people that make the difference between success and failure," says Chas Snyder, who heads the year 2000 project at Levi Strauss & Co. in San Francisco. "If somebody is experienced at running an effort like this for a large company, the knowledge they develop is invaluable."

Keeping programmers "has not been as big a problem as people thought it was going to be," says Jim Jones, managing director of the year 2000 group at the Information Management Forum in Atlanta. "It's not the worker-bee folks they're hurting for; it's project managers."

An August survey of 100 contracting and consulting firms by the Information Technology Association of America (ITAA) showed that the "overwhelming majority" have more programmers than they can use. The ITAA called the anticipated programmer shortage "a marketplace failing to live up to its prior billing."

The supply of year 2000 programmers has been bigger than expected because many corporations outsourced coding to offshore companies, vendors developed year 2000 tools that automated much of the coding process, and schools and training facilities graduated a bumper crop of programmers geared to the job.

With programmers available, companies realized where the real crunch would be. "Even the best programmers in the world can't make it happen if no one is managing," Dec says.

Depending on the organization, year 2000 project managers may be found at every level — and every salary — from corporate vice presidents through division managers, business functional team leaders and department honchos. There may be one project manager, or there may be a pyramid of project managers — from each division or business unit, for example — reporting to a chief. But wherever they are found, they are hard to keep. "We know that our people are being called [by headhunters] because they tell us," says Gael Hanauer, senior director of human resources for information systems at Sears,

Millennium's superstars, page 62

THE MILLENNIUM'S SUPERSTARS YEAR 2000

CONTINUED FROM PAGE 61

Roebuck and Co. in Hoffman Estates, Ill. "Consulting firms can dangle pretty big salaries, and we can't."

In fact, some consulting firms are so desperate for project managers that they are willing to pay them at the rate they bill customers for their services. "The projects can't get done without project managers, so if they bill [companies] at $125 an hour, they're willing to give [project managers] $125 an hour," Jones says. "No corporation can do that."

But corporations have come up with other strategies to keep their year 2000 project managers on the job through the millennium. Some strategies rely on the lure of money and perks, but most are based on the understanding that retention has to be a long-term effort because the need for project managers won't go away after 2000.

RECOGNITION AND ROTATION

At Kraft Foods, Inc. in Northfield, Ill., where the overall IS turnover rate is 5%, Chief Information Officer Jim Kinney has been very careful to make year 2000 a high-profile, high-recognition temporary job. "We've chosen very good people for project teams," he says. Most work only on the application set for which they're normally responsible. "Once that's finished, they rotate back to their regular assignment," Kinney explains.

Smart companies are making sure their year 2000 project managers don't stagnate during the project. "Folks focused on year 2000 are being sent to appropriate training and conferences and classes so they can stay up with technology," Dec says. She has lost only five of the 60 to 80 people in her year 2000 program management team.

Keane, Inc. in Boston, a provider of year 2000 services, has established an internal organization to look after the career development of its project managers, says David Pollard, Keane's director of recruiting.

"Rather than simply throw cash at the issue, we tapped into meeting their development objectives and getting [them] the right training so they can be successful in the long haul," he says. Turnover has declined 30% since the development organization was founded last year.

MONEY

There's nothing wrong with money judiciously deployed, and bonuses of 20% of salary aren't uncommon. Sears is offering year 2000 project managers and selected others periodic cash bonuses through April 2000.

"If we lost one of these folks, we would be hurting more than if we lost 10 other people. So rather than spread [the money] to everyone, we do more for some," Hanauer says.

BE PREPARED

Nothing can guarantee that you will retain the people crucial to your year 2000 effort. Knowing that, Snyder planned for the worst. "My biggest fear was to lose people in high leverage points," he says. "So for my core four or five managers, I designed responsibilities to be shared. That way, if I lost one, we could cover the responsibility easily."

He did lose one, he says, "but we were able to pick up the slack running."

THE BIG PICTURE

Unlike year 2000 programmers, who know their peak earning time is limited, project managers have the luxury of a long view. If your company's view is the same, you have an advantage. "Year 2000 is a short-term brass ring," Snyder says. "There might be enough in a year or two to make it worthwhile for some people to leave, but if you're thinking long term, it's not enough. The people I have are long-term Levi's employees, and they plan on staying here." □

Melymuka is Computerworld's senior editor, management.

TRIPLE THREAT

YOU THINK *YOU'VE* GOT PROBLEMS

Mike Willis runs a stable of elite IT thoroughbreds, but they've been harnessed like Clydesdales to three boring, yet critical, priorities. Year 2000, euro conversion and a huge postmerger systems integration project have converged at Warburg Dillon Read, a London-based global investment bank and a division of Swiss bank UBS AG. "It's critical to our business, yet it has a Nytol effect on our people," says Willis, the firm's Chicago regional manager of IT.

But Willis has held the turnover rate to single digits with an approach built on esprit de corps.

FOCUS — "Our firm has truly circled the wagons around these activities," Willis says. "Our business guys get it. There's a clear recognition that IT is carrying the firm on its back to get through this, and IT people do respond to that."

OPPORTUNITY TO EXCEL — Despite organizational standards, a history of mergers has created a complex technical environment, Willis says. "These millennium programs are giving us the opportunity to [streamline], and the business is holding off on everything else. It's under more pressure than we would have asked for, but it's exactly what we wanted. People can relate to that and say, 'Yeah, for all the successes we've had, we know there's still a top gear out there, and we can find that top gear.' "

SUSTAINABLE EFFORT — "There's a trap we started to fall into," Willis says. "Maybe people should dig, dig, dig and go at 110% for a year and knock year 2000 and the euro out and then take a breather. But then the merger crystallized for us all that it's not going to stop. In fact, we're going to have a year and a half of pent-up business demand.

"Our focus needed to change from sacrifice to efficiency. We've learned some simple things you can do that make a big difference: telecommuting, flex hours. If you see some staff going over the top, working later and later and on weekends, reel them in."

— *Kathleen Melymuka*

Levi Strauss' Chas Snyder has his core year 2000 project managers share responsibilities, so that if one left – and one did – the others could cover the duties easily, helping the project run more smoothly.

Steve Rubnitz

YEAR 2000 SCOREBOARD

An occasional series on year 2000 trends, issues and statistics

INSURANCE: No sure thing

If you think your company's insurance will cover year 2000 losses, think again. At least one major insurer is taking the position that there's little or no coverage for year 2000 under existing corporate policies, says Joshua Gold, a partner at Anderson, Kill & Olick PC, a New York law firm.

"They're not even relying on the notion that there needs to be a specific exclusion for year 2000," he says.

It's a good idea to add an insurance team to your year 2000 cadre, Gold says. The team should include representatives from information technology and risk management and your broker and counsel, he says. Other steps you should take include the following:

- Collect, organize and analyze all potentially applicable policies.
- Determine in writing the status of each policy with regard to potential year 2000 claims.
- Oppose efforts at renewal time by insurance companies to insert year 2000 exclusions in your policies. Some companies will waive a year 2000 exclusion if you sign a multiyear contract. Otherwise, "negotiate hard," Gold says. "Threaten to remove your business."
- Some policies can be canceled for a "change in risk," he says. Get rid of that kind of provision and make sure the policy is noncancellable.
- Ensure that insurance applications are accurate, complete and consistent with all other filings. "If there is a misstatement, whether intentional or unintentional, they will use that as an argument to rescind the policy," Gold says. "If you can't answer a question, don't guess."
- Give timely notice. Most insurance policies have a provision requiring claimants to give notice "in a timely manner" of a claim or circumstances that may lead to a claim. Insurance companies may argue that policyholders gave late notice of the claim, so all coverage is forfeited.

If you think your insurer may exclude year 2000 coverage at the next renewal, and you anticipate that some circumstance in your readiness may eventually lead to a claim, you may want to consider giving notice now to lock-in coverage under your existing policy, Gold says.

- Consider new insurance products being marketed specifically for year 2000 losses and liabilities. — Kathleen Melymuka

Red herrings on your desktop?

Just how far must you go to make your users' desktop programs year 2000-compliant? Not as far as many think: It's almost always unnecessary to fix each date that appears in a file or a cell, and that means you can avoid many hours of tedious work.

"Only 3% to 5% of desktop spreadsheets and database files require remediation," says Allen D. Falcon, an executive vice president at IST Development, Inc. in Boston (*www.istinfo.com*). That's a surprising thing to hear from a top executive at a year 2000 desktop tool vendor.

Here's why: Programs such as Microsoft Corp.'s Excel and Access and Lotus Development Corp.'s 1-2-3 and FoxPro don't store dates as days, months and years — even though that's how users enter dates. Instead, those programs convert the dates then store them as the number of days past a particular date. Enter Dec. 25, 1998, into Microsoft Excel, and the date is stored as 36154 — the number of days after Jan. 1, 1900, Falcon says. Those numbers are called "date serial numbers."

That means users of those programs usually don't need to worry about date formats — whether a year is formatted as two or four digits, according to Falcon. The same goes for performing calculations based on dates: The math is done using date serial numbers.

The year 2000 experts we spoke to — Capers Jones; Meta Group, Inc. analyst Shawn Bohner, who previously ran GTE Corp.'s Software Maintenance Technologies laboratory; and Doug Bowman, a consultant at DMR Consulting Group in Edison, N.J., who now fixes end-user-developed applications at a major global financial institution — say Falcon is on target.

Still, there are gotchas mixed in with the red herrings. In each of the programs, Falcon says, certain date-related functions need to be checked carefully. For example, in Excel, the "date ( )" function always interprets 00 as 1900, he says. Macros, scripts and modules also require analysis: They may be programmed following different rules for handling dates.

— Allan E. Alter

Damage possibilities

How accurate are the year 2000 doomsayers? Software researcher Capers Jones predicted the probabilities of various scenarios on the Year 2000 Information Center World Wide Web site (*www.year2000.com*). His numbers are based on studies by his firm, Burlington, Mass.-based Software Productivity Research, and on conversations with economists and executives who deal with risk and year 2000 repairs. His predictions include the following:

Bad credit reports because of year 2000 errors	70%
Cancellation of year 2000 liability insurance	60%
Loss of local electric power (more than one day)	55%
Litigation against corporate officers	55%
Social Security payment errors	35%
Airline flight delays or cancellations	25%
Medical or hospital billing errors	20%
Manufacturing shutdowns (more than one day)	20%
Reduction in stock values	20%
Errors in bank account balances	15%
Shipping delays or cancellations	10%
Water shortages/rationing	7%
Corporate bankruptcy because of year 2000	5%
Death or injuries because of year 2000	1%

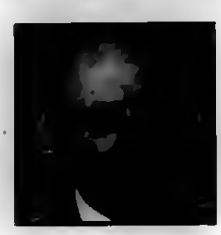
MORE ONLINE

For links to other resources on the year 2000 problem, visit Computerworld online.

www.computerworld.com/more

PAUL A. STRASSMANN

THE ROAD TO FAILURE IS PAVED WITH GLIB BUZZWORDS



What happened to re-engineering, the paperless office, zero administration costs and portable open systems? What happened to chief information officers who bet their careers on thin clients, defect-free software and the architecture of information? All those ideas seemed great but disappeared as fast as they showed up.

With the publishing of a thesaurus of managerial fads (*Management Tools and Techniques*, by Darrell K. Rigby, Bain & Co., 1998), the time has come to inoculate IT managers against buzzword-itis. When it becomes a chronic condition, manifested by frequent attendance at conferences that peddle such emanations, buzzword-itis can cause permanent damage to a person's capacity as a decision-maker. Sufferers can be easily diagnosed: Their incomprehensible presentations suggest radical instant fix-it schema that call for new funding but without benefits that anyone can prove.

The rapid pace of technological innovation has spawned an outburst of verbal gymnastics on how to cope with rapid changes. In an era where **knowledge** and **vaporware** are peddled like detergent, the purveyors of ideas need not produce any proofs of novelty or value. Proponents of a new buzzword can rarely, if ever, show verifiable benefits.

Some buzzwords are just new spins on old ideas. For instance, Gartner Group has coined a new phrase, **Zero Latency Enterprise Strategy**, and labeled it "one of the most important new computing trends of the next five years." After closer examination of what it means, in terms of rapid and automated systems responsiveness, it's only a rephrasing of ideas I heard 30 years ago, when real-time computing was sold to me as the solution to my batch-processing difficulties. Likewise, the latest ballyhoo about **digital nervous systems** is nothing but advertiser-speak about systems integration.

Buzzword-itis is cheap and easy to spread. The manufacturing cost of new buzzwords is negligible, as is their distribution cost. Book reviewers, journalists and particularly consultants are always looking for a new twist and will readily spread the word. Punchy phrases such as **failure-proof computing** or **ready, fire, aim planning** are worth a lot of money on the lecture circuit and at consulting engagements.

So, if buzzwords cost little to produce, enjoy widespread popularity and can be enormously profitable, why not enjoy the experience as a form of mental stimulation? Well, buzzword-itis can be harmful — it has unintended aftereffects.

Let's take **just-in-time inventory** or **cycle-time reduction**. Great ideas. But they will incapacitate your factory if a truck carrying spare parts crashes or if the supplier's computer system can't respond.

Take **electronic commerce** or **made-to-order manufacturing**. Sounds great. But they will cripple your company's logistics if an order for 100 widgets is transmitted as 100,000. Take **re-engineering** or concentrating on **core competencies**. Fantastic! But they will demoralize employees as they recognize that such wording is mostly camouflage for head-chopping.

Take **data warehousing** or **knowledge management**. Obviously useful, except that the consolidated archives become easier targets for information crime.

Take **balanced scorecards** or **satisfaction surveys**. They're known to produce meaningless statistics when the participants tell management what they think management wishes to hear.

According to some theologians, the devil exists because otherwise true goodness wouldn't be discernible. And so it goes with attractive ideas. Somebody must play the devil's advocate. Every organization must find a way to limit the damages from unconstrained expectations that overemphasize the benefits from the latest technological miracle.

IT people are among the largest generators and most eager consumers of buzzwords.

For information managers to be trusted, they must not only lead on the upside by demonstrating what technology potentially can deliver, but also protect their clients on the downside by discussing what computers can mess up if safeguards fail.

TELL THE TRUTH

Information technology projects shouldn't be clothed only in expectations perfumed with the latest buzzwords. Good IT plans must be accompanied with a thorough venting (from completely independent sources) about how bad it can get if everything doesn't go as expected.

The latest disclosure ruling from the Securities and Exchange Commission requiring companies to state their potential year 2000 dollar damages if their remediation efforts don't succeed as planned is certainly the right step in this direction. The buzzword *year 2000-compliant* (a demonstrably misleading claim for most windowing and encapsulating fixes) melts like ice on a stove when a chief financial officer must attest what are the likely dollar consequences. I believe that corporate management soon will follow with similar reporting demands, as it becomes more buzzword-proof against the presumed magic of computers. □

Strassmann (ceo@stacorp.com) is an active proponent of independent verification and validation of the risks of information technologies. He finds that the rate of buzzword creation is directly related to the number of magazine advertising pages about computers.

Review Center

BY CHRIS LINDQUIST

INTRANET ON A SHOESTRING

troy thomas

Linux makes it easy to set up your own intranet on the cheap

The small sales group in the branch office in Atlanta has been bugging you for months. They want a way for their 10 sales and support people to share files, view regularly updated local Hypertext Markup Language (HTML) documents and get on the World Wide Web easily — right now.

Unfortunately, your budget is tapped out. What to do? It's time for an intranet on the cheap. Setting one up using commercial tools can cost thousands of dollars, even if you need to support only a few users. But Linux has made it possible for just about anyone with an old 486, some network cards and a few spare hours to set up an intranet that combines Web access, local Hypertext Transfer Protocol (HTTP) service, E-mail, file sharing — even news and chat groups — all for a negligible cash investment. After setting up my own small intranet using Linux, Apache and other free tools, I concluded that an intranet on the cheap is certainly worth consideration. My total cost hit $49.95 because I opted to buy the software rather than download it for free.

Linux is a Unix-like Posix-compliant operating system distributed under the GNU software license

Intranets, page 66

INTRANETS ON

CONTINUED FROM PAGE 65

The basics

First, a definition: Linux is a Unix-like Posix-compliant operating system distributed under the GNU (Gnu's Not Unix) software license. That means the operating system and its source code are available for free to anyone who wants them. Originally built as a hobby project by Linus Torvalds, Linux has become a computing religion for its advocates.

Early Linux users were often programmers looking for a new challenge. But as the operating system matured and applications appeared, a few corporate customers began to take notice, lured by the product's flexibility, minimal system requirements and low price. By some estimates, more than a million people worldwide now use Linux, including some large corporations, and for several good reasons.

Because of its modular nature, Linux can be stripped down to the bare essentials, so it can run effectively on an old 386 PC with 16M bytes of RAM and a 200M-byte hard disk. As a result, Linux can give those old systems gathering dust in a closet new life as inexpensive Web servers, domain name servers (DNS) or E-mail servers.

In fact, older hardware sometimes can be easier to configure under Linux than new equipment. Although it can take weeks or even months for Linux drivers to appear for the latest peripheral, a wide assortment of drivers are freely available for older products. Linux also has a reputation for outstanding stability. I contacted several Linux users for their input on creating intranets, and several of them reported system uptime in terms of months and even years. And Linux's popularity among programmers has resulted in a large selection of software — everything from proxy servers to clustering kits to screen savers. Its Posix compliance also has made it easier for developers to port many popular Unix applications and utilities to Linux. Even better, much of that software is free. But Linux does have a price.

Cheap stakes

PROS:
- Operating system inexpensive or free
- Wide variety of software available
- Reliable
- Runs well on older hardware
- User community eager to help

CONS:
- Administration can be cumbersome
- No big-company support system
- Documentation quality varies dramatically

Hidden costs

If you and your company prefer that your software come with service agreements and salespeople in suits, Linux probably won't appeal to you.

Purchasing hardware and software is only a small part of the cost equation. Supporting a Linux box requires a technician who knows how to use it. If you already have a company full of Windows NT experts, it may cost you more in the long run to have one of them take on learning Linux than to simply buy another NT license. And Linux doesn't contain the cost-of-ownership reduction or application integration features — such as automatic, policy-controlled software installation over the network — that Microsoft Corp. promises in upcoming Windows versions.

Although an increasing number of vendors, value-added resellers and consultants offer Linux support services, you won't find a company the size of Microsoft or IBM to help when something goes wrong (whether that is a pro or a con depends on your point of view). In some cases, Linux technical support is available from the vendor via E-mail only. In others, Linux users make up an informal support network via newsgroups and mailing lists.

Installing Linux software can often involve compiling source code, too — a situation uncommon with Windows NT packages. Though having a product's source code available is appealing to programmers who like to tweak buggy code themselves, many information technology managers would rather have their employees engaged in other pursuits.

For that reason, some IT shops are hesitant to endorse Linux, at least officially.

But just because the decision-makers don't know it's there doe not mean Linux isn't around, according to Dan Kusnetzky, program director for operating environments and serverware at International Data Corp. (IDC), a sister company to *Computerworld*.

Kusnetzky points to a recent IDC study that noted statistically insignificant amounts of Linux usage reported by chief information officers.

But when he talked with people at the department level in a large, "Linux-free" firm, he found a different story. The people on the firing line reported approximately 100 Linux installations scrounged from old 386s and 486s and put to use as servers when no funding was available for other means.

If an operating system can work its way into companies that deny its existence, there must be a reason. I decided to find out why.

An intranet of my own

For testing purposes, I planned a small Linux intranet consisting of a Linux server and three Windows 95 and 98 clients. My goal: to publish HTML files via a local Web server, share directories on the server and provide access to a dial-up Internet connection on the Linux box. It's nothing Windows NT couldn't do easily, but the NT approach could cost more than $1,000 and require expensive hardware. To help me get started, I visited several Web sites that have collected a wide assortment of Linux information (see box, page 67). Unfortunately, the quality of the documentation varies from outstanding to barely decipherable. On a few occasions, a quick search of the Linux newsgroups resulted in answers better related to my situation than the online how-to guides could offer.

Based on my experience, expect that, unless you have a Linux or Unix expert already on hand, someone will need to spend a week or so investigating all the available options. After my research, I decided to go with Red Hat Software's Red Hat Linux 5.0, which I chose from a list of about two dozen vendors offering Linux distributions.

User reports generally rated Red Hat as the easiest Linux distribution to install, and I agree. It was quick and simple. The CD-ROM-based installer sniffed out my PCI-based hardware without fuss and let me quickly pick the packages I wanted.

> You won't have to spend your weekend getting your Linux system up and running but there's a price

When installing Linux, however, it pays to keep a list of installed hardware, including drive sizes and types, and network configuration information. That way you won't need to hunt for the information in the middle of an installation if your distribution can't identify a piece of hardware.

Red Hat came complete with all the software I needed to set up my intranet. I chose to install server message block (SMB) file-sharing services that would give clients access to personal and public folders on the Linux server, the Apache Web server and IP sharing via IP forwarding (the Linux firewall facility), so users could all share the Linux server's dial-up Internet provider account.

Red Hat also bundles a variety of X-Windows-based graphical configuration tools, making it easier to add users and configure network devices without having to edit configuration files by hand. But if you are going to be serious about Linux, you will need to get friendly with your favorite text editor (Red Hat includes several). In the interest of keeping things streamlined, Linux bypasses a full-time graphical user interface in

A SHOESTRING

favor of the command line and configuration files.

The lack of a GUI can be the most daunting feature of Linux for anyone used to the point-and-click approach of NT. Setting up file sharing required editing a text file by hand, adding information for each user. Yet things could certainly get overwhelming if you were supporting a large number of users or servers — a typo in one line may be all it takes to keep a system from working properly.

Setting up the Windows clients involved simply installing TCP/IP network protocols, entering user names, passwords and group names to match the accounts I established on the Linux box, assigning local IP addresses to each client and providing my Linux box's IP address as the clients' gateway address. Being Windows, all those steps were point-and-click operations.

Once configured, the intranet functioned flawlessly. Rather than leave my dial-up connection running constantly, I was able to configure Linux to dial whenever an IP request arrived from another machine.

While connected, as many users as required could use the same line, but with increasingly poor performance on my single 56K bit/sec. line, of course. By creating personal folders within my HTTP directory and connecting to them with SMB services, users could drop in their own HTML documents for public viewing via Apache.

Conclusion

As an inexpensive way to set up a simple intranet server — or many other types of servers, such as E-mail, DNS and so on — Linux is up to the task. Within hours, I was able to install the software and configure my applications. Linux isn't as slick, high-tech or well-marketed as NT, but it can more than get the job done when applied properly. □

Lindquist is a reviewer in Moss Beach, Calif. He can be reached at chris@linqink.com.

OPTIONS AND RESOURCES

Linux creator Linus Torvalds still has control over his brainchild's kernel, but several commercial developers have taken the operating system and packaged it for commercial distribution. Several of the vendors pack in additional products and ease-of-use features, as well. If you would rather not pay anything, you can simply download the various distributions and collect all the extra pieces yourself as you need them.

OPERATING SYSTEM OPTIONS

▸Red Hat Linux 5.1
www.redhat.com
$49.95
Intel, Sparc, Alpha
Red Hat's Linux distribution has a good reputation among beginners for being easy to install. Red Hat Linux 5.1 can automatically detect a large list of hardware on setup, and its Red Hat Package Manager simplifies adding, upgrading and repairing software packages. Red Hat also offers 90 days of E-mail installation support with purchase.

▸Caldera Open Linux Standard 1.2
www.caldera.com
$199
More expensive than Red Hat and without some of the simplifying tools, Caldera's Open Linux Standard compensates by packing in a wide assortment of software products designed to get Web sites and intranets running with minimal effort. Open Linux Standard 1.2 includes Netscape's FastTrack Server, NetWare integration, the StarOffice productivity suite, the Adabas D SQL database (Personal Edition) and Corel's WordPerfect for Linux.

▸FreeBSD
www.freebsd.org
It isn't Linux, but it is free. FreeBSD is a public-domain Unix distribution based on the 4.4BSD-Lite release from the University of California at Berkeley. Although it hasn't benefited from the recent hype surrounding Linux, FreeBSD is a powerful operating system that supports a wide variety of Unix software.

OTHERS:

▸Slackware Linux
www.slackware.org

▸Debian
www.debian.org

▸SuSE
www.suse.org

ADDITIONAL INTRANET PARTS FROM THE INTERNET

▸Hawkeye
www.hawkeye.net
Complete set of intranet tools, including Web, E-mail, news, file and chat servers. Requires mySQL.

▸mySQL
www.mysql.org
SQL database for Linux. Free unless you bundle it with another commercial product.

▸Qmail
www.qmail.org
Simpler, more secure replacement for sendmail server that comes with Linux distributions.

▸Apache
www.apache.org
Popular, complete Web server. Used by many large commercial Internet providers and Web sites. Included with some Linux distributions, such as Red Hat 5.1.

ONLINE RESOURCES

▸Linux Documentation Project
sunsite.unc.edu/mdw/linux.html
A comprehensive collection of Linux documentation, including how-tos on a large number of topics from basic installations to network administration.

▸Linux Online
www.linux.org
Loads of articles, links, mailing lists and more about Linux.

▸Linux Mall
www.linuxmall.com
Linux software sales for all major distributions, plus Linux news and a newsletter.

▸Hardware compatibility list:
www.linuxhq.com/HOWTO/Hardware-HOWTO.html

▸The Great Linux vs. NT Debate (Note: biased toward Linux)
www.jimmo.com/Debate/toc.html

▸Linux newsgroups:
comp.os.linux
comp.os.linux.setup
comp.os.linux.help
comp.os.linux.questions

EXECUTIVE TECHNOLOGY

REMOVABLE STORAGE

By Howard Millman

Have you received one too many "insufficient disk space" messages when trying to save even a simple PowerPoint presentation to a standard floppy disk? Or has the idea of loading 200 floppies and spending hours of your time backing up your hard drive convinced you that it's time to upgrade?

Two of the most popular choices to supplement the traditional 3.5-in., 1.44M-byte floppy disk drive include Iomega Corp.'s popular Zip Drive and Imation Corp.'s SuperDisk. Both units use "removable" disks: When you fill up one disk, simply pop in another. Essentially, you have an unlimited amount of storage space.

Imation's SuperDisk has a dual personality: In addition to saving and retrieving data on its own special, 120M-byte disks, its backward compatibility enables you to also use standard 1.44M-byte disks. Of course, you'll want to use the 120M-byte SuperDisks whenever possible because of their ability to store up to 80 times the amount of data that fits on regular 3.5-in. disks. Iomega's Zip drive uses a 100M-byte disk. Although the Zip stores less than the 120M-byte SuperDisk, that isn't as significant a difference as the Zip's inability to read and write standard, 3.5-in. floppies. "It's a real dogfight between these two technologies," says Bob Amatruda, a senior analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*. "If you have a closetful of floppies, then the SuperDisk is the clear winner. But with the Zip currently shipping about 1 million units per month, and [with] 14 million shipped to date, chances are good that you can find a colleague or business partner who can read that disk."

Unlike the classic 1970s contest between Panasonic Co.'s VHS standard and Sony Corp.'s failed Betamax format for VCRs, there's no "wrong" decision between the Zip and SuperDisk drives that will leave you totally isolated. "There's definitely room for multiple formats in this growing market. No one format will or must prevail," Amatruda says.

I tested the external models of each drive, connecting them to my computer's printer (parallel) port. Unlike internal drives, the external model can be easily switched between a desktop computer and laptop. In addition, you may not need any information systems support for the installation because you can probably install these models yourself. After running a one-time, two-minute installation routine, you merely connect one cable from the external drive to your laptop or desktop computer. Based on my tests, I preferred the faster, more stable Zip Drive — even if it can't read or write to 3.5-in. disks. Why? Because the Zip installed without a hitch.

It also transferred files twice as fast as the SuperDisk and about four times faster than a standard 3.5-in. floppy. And unlike the SuperDisk, it didn't annihilate my computer during setup. When I tried to install the SuperDisk on my IBM desktop, it twice trashed my machine.

To recover, I had to reinstall Windows 98. Based on my experiences, the SuperDisk isn't quite ready for prime time. That's too bad, because its ability to read and write to standard floppies could be a significant advantage.

The SuperDisk did work — sort of — when hooked up to a Compaq laptop. But even there, its performance was dismal compared with the Zip Drive. When I transferred multiple files, the Imation unit would often hang during the exchange, forcing me to reboot. It occasionally took five seconds to copy or delete a single file.

One note: By press time, Imation acknowledged that if users experienced the same problems that I did with the Version 1.25 driver, the company will provide an upgraded 1.3 driver. □

Millman operates Data System Service Group LLC, a Croton, N.Y., consultancy. His E-mail address is hmillman@ibm.net.

Iomega Zip Drive

Iomega Corp.
Roy, Utah
(800) 697-8833
www.iomega.com
Cost of drive: **$150**
Cost of disks: $13 each when bought in a 10-pack

PROS: Reads and writes files about twice as fast as the SuperDisk — and about four times faster than a standard floppy drive. Greater reliability than SuperDisk. Optional battery power-pack available

CONS: Can't read or write to standard 3.5-in. floppy disks. Holds 100M bytes of data compared with the 120M-byte SuperDisk

Imation SuperDisk

Imation Corp..
Oakdale, Minn.
(800) 888-2700
www.imation.com
Cost of drive: **$150** (less **$50 rebate**)
Cost of disks: $10 each when bought in a 10-pack

PRO: Backward-compatible with 3.5-in. floppies

CONS: Failed to work adequately — or at all — in my tests. Heavier, slower and more costly than the Zip Drive

PRODUCT UPDATE:

Another high-capacity drive — produced jointly by Sony Corp. and Fuji Photo Film Co. — is about to enter the market. Already well past its scheduled release date of this year's second quarter, the new unit is expected to ship sometime this year, according to Sony.

Fuji says the 200M-byte High Capacity Floppy Drive (HIFD) will provide the best of both worlds: performance superior to Imation's SuperDisk and greater storage than Iomega's Zip disks.

In addition, the HIFD will offer backward compatibility with 3.5-in. drives. Sony would neither release a firm shipping date nor predict the drive's pricing.

SHIFTING LANDSCAPE:

Despite all the advances in computer hardware, the 3.5-in. disk has successfully battled extinction for more than 10 years. IDC analyst Bob Amatruda projects that media vendors will ship more than 4 billion 1.44M-byte disks and about 90 million 3.5-in. drives this year.

He predicts annual shipments of extended storage devices will rise from 14.9 million today to 36 million by 2000 and 75 million by 2002. "Most will go into laptops. That's where I see most of the growth happening," he says.

In Depth

The long arm of Moore's Law

Recent advances will help propel chip power up its exponential growth curve for another decade – at least

By Gary H. Anthes

In 1965, an engineer at Fairchild Semiconductor named Gordon Moore noted that the number of transistors on a chip doubled every 18 to 24 months. A corollary to "Moore's Law," as that observation came to be known, is that the speed of microprocessors, at a constant cost, also doubles every 18 to 24 months.

Moore's Law has held up for more than 30 years. It worked in 1969 when Moore's start-up, Intel Corp., put its first processor chip — the 4-bit, 104-KHz 4004 — into a Japanese calculator. And it still works today for Intel's 32-bit, 450-MHz Pentium II processor, which has 7.5 million transistors and is 233,000 times faster than the 2,300-transistor 4004.

Intel says it will have 100-million-transistor chips on the market in 2001 and a 1-billion-transistor powerhouse performing at 100,000 MIPS in 2011.

For users, it's been a fast, fun and mostly free ride. But can it last?

Although observers have been saying for decades that exponential gains in chip performance would slow in a few years, experts today generally agree that Moore's Law will continue to govern the industry for another 10 years, at least. Nevertheless, it does face two other formidable sets of laws: those of physics and economics.

A mind-numbing variety of things get exponentially harder as the density of circuits on a silicon wafer increases. The Semiconductor Industry Association's (SIA) 1997 Technology Roadmap identified a number of "grand challenges" as the width of individual circuits on a semiconductor chip shrinks from today's 250 nanometers (or billionths of a meter) to 100 nanometers in 2006, four product cycles later. One hundred nanometers is seen as a particularly challenging hurdle because conventional manufacturing techniques begin to fail as chip features approach that size.

And it isn't just making the chips that's getting more difficult — as Intel discovered in 1994 when an obscure flaw in its then-new Pentium processor triggered a firestorm of bad publicity that cost the company $475 million. Modern chips are so complex that it's impossible, as a practical matter, to test them exhaustively. Increasingly, chip makers rely on incomplete testing combined with statistical analysis. The same methods are used to test very complex software, such as operating systems — but for whatever reason, users who are willing to put up with software bugs are

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ANDY POTGIESER

The long arm of Moore's Law

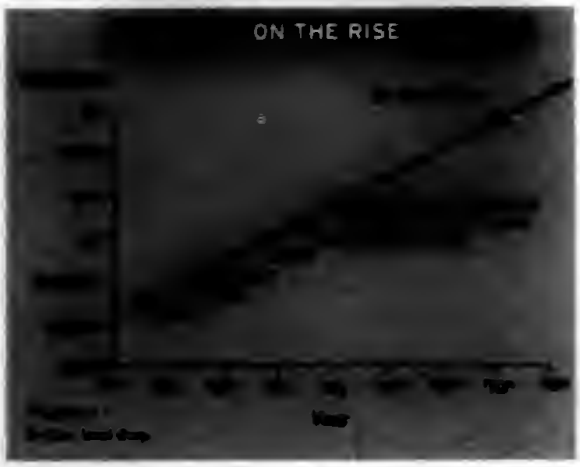
CONTINUED FROM PAGE 69

intolerant of flaws in hardware.

At the present rate of improvement in test equipment, the factory yield of good chips will plummet from 90% today to an unacceptable 52% in 2012. At that point, it will cost more to test chips than to make them, the SIA says.

Chip makers are hustling to improve testing equipment — and are extremely reluctant to discuss the matter, which they see as vital to their future competitiveness.

Although the cost of a chip on a per-transistor or per-unit-of-performance basis continues to fall smartly, it masks a grim reality for chip makers: A fabrication plant costs about $2 billion today, and the price is expected to zoom to $10 billion — more than a nuclear power plant — as circuit widths shrink below 100 nanometers. Significantly, "scaling" isn't one of the SIA's grand challenges. "Affordable scaling" is.



Indeed, the industry's progress may eventually be slowed by a lack of capital, says James T. Clemens, head of very large-scale integration research at Bell Laboratories, the Murray Hill, N.J., research and development arm of Lucent Technologies, Inc. "Social and financial issues, not technical issues, may ultimately limit the widespread application of advanced [sub-100 nanometers] integrated circuit technology," he says.

As an analogy, Clemens points to the airline industry, which knows how to routinely fly passengers faster than sound but, due to the cost and technical complexity, doesn't do it.

"A lot of people are worried about cost," says John Shen, a professor of electrical and computer engineering at Carnegie Mellon University in Pittsburgh. "You see more and more companies bailing out."

LILLIPUTIAN LINES

Transistors are etched onto silicon by optical lithography, a process by which ultraviolet light is beamed through a mask to print a pattern of interconnecting lines on a chemically sensitive surface. The conventional approaches that work at 250 nanometers probably can be refined to etch features as small as 130 nanometers: 400 atoms wide, which is a thousand times thinner than a human hair. But at 100 nanometers and below, where the wavelength of light exceeds the size of the smallest features, entirely new methods will be needed.

An Intel-led consortium is working on "extreme ultraviolet" lithography, which uses xenon gas to produce wavelengths down to 10 nanometers. An approach favored by IBM uses X rays with a wavelength of 5 nanometers. Meanwhile, Lucent is developing lithography that uses a beam of electrons. These and other alternatives are complex, costly and still unproven.

Continued progress in processor speeds will require better ways of designing and making chips, but the biggest obstacles to higher performance may currently lie just off the chip: in the motherboard and in the logic that connects the chip to cache memory, graphics ports and other things.

"We do not have the design or manufacturing capabilities in those off-chip structures to keep up with the rapid growth in processor clock speeds," says Bruce Shriver, a consultant in Ossining, N.Y., and a computer science professor at the University of Tromso in Norway. "Unless the design and implementation capabilities in those areas catch up, then they will be a critical limiting point."

But Albert Yu, general manager of Intel's Microprocessor Products Group, says Shriver is worried about a "very temporary problem." Increasingly, off-chip units such as cache will become integrated onto the processor chip, allowing them to work at the same high frequencies as the processor and eliminating the bus between them, he says.

In just the past few months, a number of promising announcements have come out of U.S. research labs:

- Last month, IBM began shipping 400-MHz PowerPC chips that use copper wiring instead of the conventional aluminum, which doesn't perform as well but is easier to manufacture. As circuits shrink, the performance and cost advantages of copper grow.
- IBM announced last month that it could boost transistor switching speeds 25% to 35% by putting an insulating layer of silicon dioxide — called "silicon-on-insulator" — between the transistor and its silicon substrate. Refinements of the technology, which reduces distortion and current drain, could push feature widths down to 50 nanometers, IBM says.
- In February, a graduate student research team at the University of Texas, working with the industry consortium Sematech, printed 80-nanometer features (one-third the size of today's) on a semiconductor wafer. Remarkably, the tiny features were produced with conventional deep ultraviolet light. The advance was due to a special etched-quartz mask developed by DuPont Photomasks, Inc. in Round Rock, Texas.

None of these is the breakthrough that will buy another decade for Moore's Law. But they illustrate the kinds of advances that chip away at the brick wall toward which Moore's Law is habitually said to be headed.

Says Carnegie Mellon's Shen, "We've always said there's this wall out there, but when you get closer to it, it sort of fades away or gets pushed back." □

Anthes is Computerworld's editor at large. His Internet address is gary_anthes@cw.com.

MANY HANDS MAKE LIGHT WORK

Ultimately, users don't care about transistor counts, clock speeds or even MIPS. They care how much real work their computers get done. One way to make the processor do more work is to move some of the work from hardware to software.

Today's microprocessors are able to achieve "superscalar" performance by executing several instructions simultaneously. Intel's Pentium II — which can execute up to five instructions at a time — predicts the flow of a program through several branches by looking ahead in the program. It analyzes program flow and schedules execution in the most efficient sequence. It also executes instructions "speculatively" — before they are needed — and holds the results in suspense until the predicted branches are confirmed.

But there's a law of diminishing returns for this technique because the chip must devote more and more of its circuitry to management of the complex processes.

Now an old concept — the very long instruction word (VLIW) processor — is making a comeback, notably in the new 64-bit Merced chip, part of the Explicitly Parallel Instruction Computing (EPIC) family of processors being developed by Intel and Hewlett-Packard Co. VLIW counts on the compiler, and to some extent the programmer, to specify where parallel execution of code is possible, relieving the processor of that burden.

VLIW has some pitfalls, says Carnegie Mellon University's chip expert John Shen. "Merced is hoping that, by moving the work to the compiler, you can make your hardware very clean and fast," he says. But complexity in software traditionally has been harder to manage than complexity in hardware, he says, and it takes longer to develop new compilers than new microprocessors.

Intel senior vice president Albert Yu won't reveal how EPIC works, but he says labeling it a VLIW architecture is a "misinterpretation." But, he says, "We rely on the compiler to do a lot of stuff."

Bruce Shriver, co-author of a new electronic book, *The Anatomy of a High-Performance Microprocessor*, says improvements in hardware-based branch prediction algorithms will allow superscalar processors to execute a dozen or more instructions simultaneously, twice what is possible today. And he says compilers will be created that do a better job of optimizing code for more efficient execution. — *Gary H. Anthes*

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7:45am **Continental Breakfast & Conference Registration**

8:30am **Building an Internet Recruitment Strategy**
Tracey Claybrooke,
Claybrooke & Associates

10:00am **Sponsor Showcase/Coffee Break**

10:30am **Strategic Staffing in a Competitive Environment**
Carlos Echalar, Litton PRC

12:00pm **Luncheon Keynote:**
Joe Maglitta,
Industry Editor, Computerworld

1:30pm **Town Hall Forum**
Moderator Fred Rodriguez,
Mexican American Opportunities Foundation

2:30pm **Sponsor Showcase/Coffee Break**

3:00pm **High Tech/High Touch: Creating the Recruiting Office of the Future**
Sue Keever,
The Keever Group

4:30pm **Program ends**

Selected Sessions Include:

Luncheon/Keynote Address
Joe Maglitta, Industry Editor, Computerworld
Joe Maglitta, one of the industry's leading watchers of the Information Systems profession, will give you an up-to-the-minute view to this very special keynote address.

Building an Internet Recruitment Strategy
Tracey Claybrooke, President, Claybrooke & Associates, Inc.
As mass advertising reaches a consumer by television, radio, billboards, print media to various locations and venues - this same marketing/prospecting effort can take place on the internet to maximize your recruitment efforts. Learn about this and more in this session.

Strategic Staffing in a Competitive Environment
Carlos Echalar, Vice President of Staffing, Litton PRC
The program will address today's staffing issues from a proactive vs. reactive business approach. The program will also demonstrate a systematic 5 step approach to a full life-cycle staffing process and implementation across the business. Each step contains components and issues that need to be considered in developing and initializing a strategic plan of identifying and attracting today's top talent in an effective and cost efficient manner.

Town Hall Forum
Fred Rodriguez, Vice President of Operations
Mexican American Opportunities Foundation
In this session, you'll not only be able to propose your specific questions for open discussion, you'll learn of real world issues and solutions from your peers. You won't want to miss this rare opportunity as Fred Rodriguez, an expert to the HR field, leads us through this modern discussion of your recruiting topics.

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AMERICA'S MOST WANTED

With experienced IT professionals still in high demand, here's a look at the top job titles this fall

By Alice LaPlante

It's difficult to keep reporting this as news, but here goes: The demand for skilled information technology workers continues to far outpace supply.

The latest *Computerworld* employment survey shows that the IT head count during the next three months will increase by nearly 2%. And during the next 12 months, the average IT shop will increase its IT staff by almost 8% of current totals.

Following are profiles of the high-demand IT jobs, along with desired qualifications, salary ranges and advice to hiring managers on how to snag the best of the most wanted. And as a tip to job candidates, all of the jobs require a bachelor of science or bachelor of arts degree and insist on excellent oral and written communications skills and team skills.

POSITION: PC TECHNICAL SUPPORT SPECIALIST

RESPONSIBILITIES: Supports desktop applications used by employees, both technical and nontechnical. Provides training for existing and new staff. Keeps client desktop software up-to-date. Manages budgets for supporting end users. Evaluates user needs. Monitors equipment purchases for PCs, hardware and software tools. Manages license agreements.

SALARY: $25,000 to $45,000
QUALIFICATIONS:
- **At least four years of IT experience.**
- **Stellar understanding of PC hardware and software, including a thorough familiarity with Intel/Windows operating systems and Microsoft Office or Lotus Notes.**
- **Basic understanding of computer networks (LAN, WAN and intranets).**

ADVICE TO HIRING MANAGERS: Internet job posting sites are becoming an invaluable resource for IT job candidates, says Sashi Parthasarathi, vice president of administrative services at Quodata Corp. in Hartford, Conn., a developer of administrative software for colleges and universities. Approximately half of the hires that Parthasarathi has made this year came from Internet postings.

POSITION: NETWORK ADMINISTRATOR

RESPONSIBILITIES: Monitors and adjusts performance of existing networks and continually surveys current infrastructure to determine future network needs. Troubleshoots problems as reported by users and automated network monitoring systems and makes recommendations for enhancements to design group.

SALARY: $55,000 to $80,000
QUALIFICATIONS:
- **Three years of experience in a corporate IT environment.**
- **Strong experience in hubs, cabling, network devices and network protocols.**

ADVICE TO HIRING MANAGERS: Pay a sizable referral bonus to employees who bring in a qualified candidate, says Robert Libertor, manager of systems services at Security First Group in Los Angeles. Libertor just brought a senior network engineer onboard after a six-week search. The real challenge is a skills shortage, Libertor says. "It takes quite a while to get the word out, and of course, you'll interview anyone who's breathing," he says. "But it took weeks of going through all the candidates before we found someone who fit our needs."

POSITION: PROJECT MANAGER

RESPONSIBILITIES: Interacts with systems development teams and related business areas to devise systems that achieve business objectives. Provides team leadership and coordinates projects, tasks and initiatives. Manages staffing and status for duration of project. Selects, deploys and configures technologies to meet business requirements. Promotes standard processes and procedures across different locations and functions.

SALARY: $80,000 to $130,000
QUALIFICATIONS:
- **At least six years of experience managing at least 15 people; demonstrated leadership skills.**
- **Experience in specific methodologies and with project life cycles and technologies.**
- **Experience in all phases of systems development process, including analysis, design, construction and unit and systems testing activities.**

ADVICE TO HIRING MANAGERS: Traditional classified advertising alone doesn't cut it anymore, says Mike O'Connor, a human resource specialist at U.S. Tsubaki, Inc., a manufacturer of motion control products in Wheeling, Ill. His advice: Also go with one of the Internet's many job posting services. "Increasingly, we depended on recruiters," he says. But the price is staggeringly high. Technical recruiters currently charge as much as 25% of a candidate's first year's salary.

POSITION: SYSTEMS PROGRAMMER/ANALYST

RESPONSIBILITIES: Performs software design, development and implementation. Formulates support plans for various business functions. Participates in installation of software, tailoring each implementation and support plan for individual user populations. Provides postinstallation training and technical guidance to users and departmental support teams.

SALARY: $45,000 to $60,000
QUALIFICATIONS:
- **At least two years of experience, usually in Windows, Windows NT, Visual Basic, C++, Hypertext Markup Language (HTML), Microsoft Office, Oracle and/or SQL technologies.**
- **Prior completion of two major IT projects.**
- **Strong customer focus and ability to meet business needs with end-user systems.**

ADVICE TO HIRING MANAGERS: "Attitude is key," says Gary Gavrash, manager of programming at AllTel Information Services, Inc., a subsidiary of AllTel Corp. in Dallas, Pa. "Depending on the position, we'll accept people who perhaps have less experience

America's most wanted, page 75

The real challenge is finding the right skills, says Security First's Robert Libertor.

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Consultant. Design, develop, implement and test software for management information & telecommunication systems. UNIX technical support & troubleshooting. Tools: UNIX, UNIX internals, C. B.S. in Computer Engineering or Computer Science + 1 yr exp in job offered or as Technical Support Assistant required. Previous exp must include: UNIX administration & C. 40 hrs/wk. 9am-5pm. $36,000/yr. Submit resumes to the following address: FDLES Bureau of Operations, 1320 Executive Ctr Dr., Ste. 110, Tallahassee, FL 32399. Re: Job Order number FL-1654634.

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CONTINUED FROM PAGE 73

than we'd like or who are looking to make a career change. If they have the right attitude and the ability to learn quickly, that's attractive."

POSITION: WEBMASTER

RESPONSIBILITIES: Assists with designing and developing World Wide Web sites, technologies and processes. Builds and modifies sites to work with current versions of major Internet search engines. Seeks out relevant portals and manages the process of making sure all posted corporate information is accurate and up-to-date. Coordinates technical development staff with content providers in other areas of the business.

SALARY: $45,000 and up
QUALIFICATIONS:
- **Strong understanding of Web technologies, particularly HTML. Web/SQL database expertise desirable.**
- **Ability to manage cross-functional teams that can include technologists, business managers and users.**
- **Basic knowledge of PCs and Macintoshes, as well as Unix, Common Gateway Interface, Perl, Java, JavaScript and Photoshop.**

ADVICE TO HIRING MANAGERS: "Be willing to consider alternatives," says Bob Weaver, director of applications services at Southwest Gas Corp. in Las Vegas. With stiff competition for recent IT graduates and experienced workers, he's turning to the local community college, sponsoring internships and hiring full-time workers when they earn their associate's degrees.

POSITION: TECHNICAL SUPPORT MANAGER

RESPONSIBILITIES: Manages the team that provides computer hardware and software support to desktop users throughout the organization. Areas of responsibility include hardware, software, communications and Internet/intranet technologies. Manages interface between technologists and end users, measures and improves response time and feedback to user requests and problems.

SALARY: $55,000 and up
QUALIFICATIONS:
- **Experience with software upgrade management and version control.**
- **Proven expertise with Windows and Microsoft Office environments.**

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POSITION: MANAGER OF INTERNET/INTRANET TECHNOLOGY

RESPONSIBILITIES: Manages team that develops new applications for the Web and the corporate intranet. Fixes and enhances existing programs, gathers user requirements for emerging technology areas and manages a team that writes code and tests applications. Ensures data integrity and manages supplier relationships.

SALARY: $80,000 to $120,000
QUALIFICATIONS:
- **Two to four years of Internet/intranet programming and development experience.**
- **Specific hands-on experience with HTML, Java, JavaScript, Unix and Visual Basic.**

ADVICE TO HIRING MANAGERS: "What's more important to today's IT professional are the educational opportunities and keeping their skills current. And a comprehensive benefits package can tip the scales," says Todd Nilson, an IT recruiter at Oxton Professional Staffing Services in Milwaukee. □

LaPlante is a freelance writer in Woodside, Calif.

THE TOP INDUSTRIES FOR PERMANENT IT STAFF HIRING

Projected staff increases or decreases for the next quarter and for 12 months. Based on survey responses from 3,489 companies with an average of 29 IT employees.

INDUSTRY	3-MONTH CHANGE	12-MONTH CHANGE*
Government	+16%	NA
Utilities and transportation	+6%	+15%
Business services (not IT)	+6%	+14%
Education	+5.5%	+12%
Health care and medical services	+4%	+10%
Computer manufacturing	+4%	+17%
Financial services and insurance	+3%	+7%
Retail and wholesale	+3%	+10%
Construction and refining	+2.5%	+7.5%
Government (federal and military)	+2%	+0.2%
Manufacturing (not computers)	+1%	+14.5%
Other industries (totals combined)	-14%	-13%
TOTAL HIRING PROJECTION	+1.8%	+7.8%

* The 12-month projection figures include the 3-month staffing change
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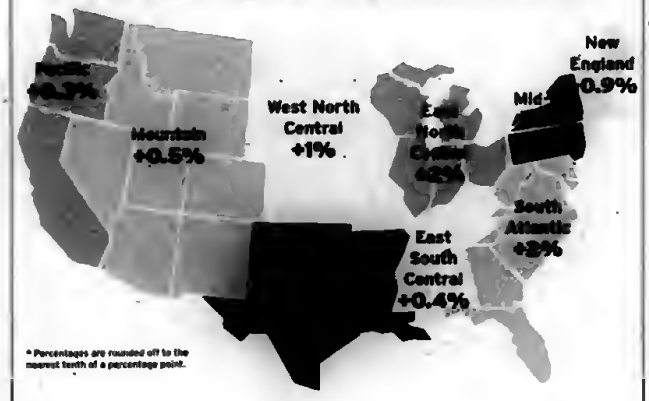

* Percentages are rounded off to the nearest tenth of a percentage point.

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Projected staff increases or decreases for the next quarter. Based on survey responses from 2,528 companies.

INDUSTRY	3-MONTH STAFFING CHANGE
Health care and medical services	+17%
Computer manufacturing	+12%
Education	+10%
Business services (not IT)	+2.5%
Utilities and transportation	+1.6%
Manufacturing (not computers)	+1%
Construction and refining	+0.7%
Government (state/city/town)	-1%
Government (federal and military)	-1.7%
Financial services and insurance	-6%
Retail and wholesale	-6.5%
TOTAL HIRING PROJECTION	-0.5%

AMERICA'S MOST WANTED

CONTINUED FROM PAGE 73

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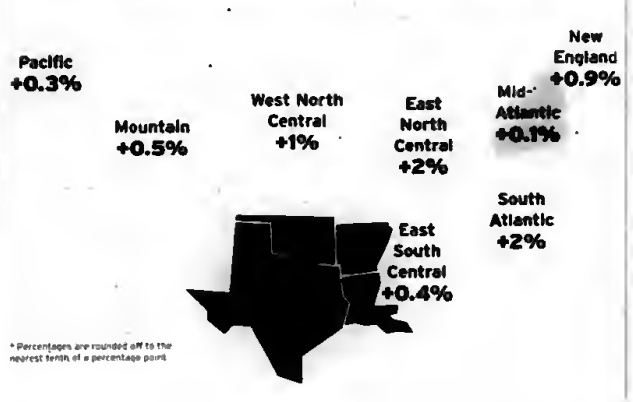

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Retail and wholesale	-6.5%
TOTAL HIRING PROJECTION	-0.5%

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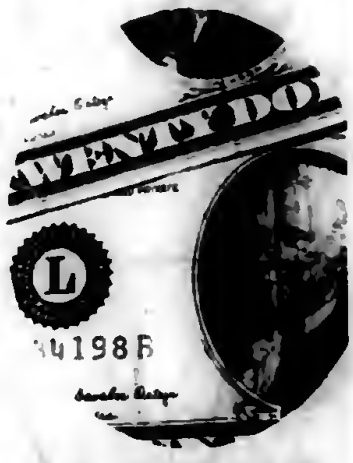

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SKILLS SCOPE

IT security opportunities

Sleeping with the enemy

By Deborah Radcliff

HIGH DEMAND FOR IT SECURITY SKILLS

Security skills will be among the top systems and support needs in the coming year.

Companies with security skills on staff now	36%
Companies planning to train for security skills	14%
Companies planning to hire for security skills	8%
Salary premium paid to permanent IT staff for security skills	9%
Salary premium paid to IT contractors for security skills	15%

Source: Computerworld's annual skills survey, to be published next month.

Fred Villella has that hollow, hopeless look of a father trying to rein in a bunch of unruly teen-agers. Villella, former secretary to the national security adviser and founder of New Dimensions, Inc. in Cardiff, Calif., hires hackers to teach information security courses to cops, agents and private-sector information technology managers.

Villella has just strolled past the Taurus rented under his account by his protege, a hacker with the handle "se7en." (They're on the way to a client dinner in San Francisco.) An ugly dent graces the left fender. "How the hell did *that* get there?" Villella asks.

"I dunno," se7en deadpans, then shrugs. "It was there when I rented it?"

Hackers. Can't live with them. Can't live without them. They possess the single-mindedness to forgo sleep and meals until they crack that last bit of code to penetrate systems.

Their abilities are so hard to find that even some of the Big Six, such as Cambridge Technology Partners, Inc. and KPMG Peat Marwick LLP, are snapping hackers off the cyberstreets to test systems for clients. That's because there's a glut of open security positions and very few skilled IT people to fill them, according to Richard Brewer, a senior analyst at International Data Corp., a sister company to *Computerworld*. To make his point, Brewer sizes up the security services market, which he says is growing at an average of about 25% annually and is expected to reach $7.3 billion by 2000.

"Everyone I talk to in human resources says that the No. 1 problem in the industry right now is that they're fighting for skilled security professionals," Brewer says. That's great news for the minority of IT professionals who already boast security skills. It's even better news for the hackers who know they may be the best you can get.

But not even Villella will tell you that working with hackers is easy. As a group, hackers are an anarchic bunch: Chaos theory and nonconformity rank high in their belief systems.

"I came from a military background. The tattoos, long hair and earrings made me very uneasy at our first hacker course. I'd worried about all my years of distinguished service going down the drain," Villella says. Fortunately, the hackers he hires take to the classroom like fish to water. □

You may already have a part-time hacker or two on staff without realizing it. But knowingly hiring one can make for strange bedfellows

The hackers among us

Faced with a shortage of experienced security pros, many IT managers find they have nowhere else to turn

Though he acknowledges the shortage of network security sharpshooters, Rob Clyde, co-founder of $100 million security software and consulting vendor Axent Technologies, Inc. in Rockville Md., says hiring hackers with questionable backgrounds could spell trouble for corporate information systems departments.

"I know of an instance where a government agency hired a known hacker to find security problems in their network. It only took the hacker a week to find all the holes, but he carefully fed the agency just one a week to stay employed for the year," Clyde says. "After the hacker left, the government agency discovered the hacker had spread information about those holes to his friends, who published it on the Internet. It was a mess to clean up."

Most IS departments have a hacker or two, but their employers usually aren't aware of their late-night activities.

Clyde says that, because of their disdain for authority, hackers probably won't climb much higher on the organizational ladder.

One who did is "yetzer-ra," a burly, long-haired hacker with a propensity for vampire clubs and silk vests. Yetzer-ra was promoted from systems administration to Windows NT security administrator at a New York-area hospital simply for speaking up about the systems vulnerabilities he found while tinkering with the NT boxes.

"I showed [the system security manager] Red Button, which is how a normal user could gain admin status and hop from machine to machine. I showed him end default shares and ways to make the machine crash," yetzer-ra explains. "In a medical environment, you've got to be aware of these things."

Yetzer-ra's advancement was based on his security knowledge, gained through self-training, persistence and attending security conferences, not necessarily by being a hacker.

Al Boulanger, who says up front that he's no hacker, works at IBM's Watson Research Lab. Boulanger got into system security after being victimized by hackers when he worked in the MIS department at a large Massachusetts university in 1994.

"I was really offended when I found the hacker had my own log-in passwords," he says. Developing his own program to track the hackers led him to a cellular cloning ring, which the feds were already investigating.

"Get as much experience with as may different systems as possible. Get to know your machine at the developer level," Boulanger says. □

Radcliff is a freelance writer in Northern California who specializes in high-tech crimes. She can be reached at DeRad@aol.com

JOE PATTON

IT CAREERS MIDWEST

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7:45am **Continental Breakfast & Conference Registration**

8:30am **Building an Internet Recruitment Strategy**
Tracey Claybrooke, Claybrooke & Associates

10:00am **Sponsor Showcase/ Coffee Break**

10:30am **Strategic Staffing in a Competitive Environment**
Carlos Echalar, Litton PRC

12:00pm **Luncheon Keynote:**
Joe Maglitta, Industry Editor, Computerworld

1:30pm **Town Hall Forum**
Moderator Fred Rodriguez, Mexican American Opportunities Foundation

2:30pm **Sponsor Showcase/ Coffee Break**

3:00pm **High Tech/High Touch: Creating the Recruiting Office of the Future**
Sue Keever, The Keever Group

4.30pm **Program ends**

Selected Sessions Include:

Luncheon/Keynote Address
Joe Maglitta, Industry Editor, Computerworld

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Building an Internet Recruitment Strategy
Tracey Claybrooke, President, Claybrooke & Associates, Inc.

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Strategic Staffing in a Competitive Environment
Carlos Echalar, Vice President of Staffing, Litton PRC

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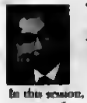

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Director: Lisa Ladle-Wallace, 5242 River Park Villas Dr., St. Augustine, FL 32092. (800) 779-5622 Fax: (800) 779-8622

Director: Fred LoSapio; District Manager: John Bosso; Account Executive: Maureen Grady; Sales & Office Associate: Susan Kusnic; Senior Sales Associate: Jean Dellarobba, Sales Associate: John Radzniak, Mack Center 1, 385 West Passaic St., Rochelle Park, NJ 07662 (201) 587-0090 Fax: (201) 587-9255. (201) 587-1289 TDD: (800) 208-0288

NORTHWEST

District Managers: Angela Flores, Denyce Kehoe, Account Executives: Kevin Ebmeyer, Monica Karmoczy, Marc Wilkie, Sales Associates: Bonni-Jo Bouchard, Amy Hudson, Sales Operations Manager: Emmie Hung; Office Services Manager: Jessica Abude; Office Services Assist.: Chris Flanagan; Receptionist: Yvonne Zuniga, 177 Bovet Road, Suite 400, San Mateo, CA 94402 (650) 357-0200 Fax: (650) 524-7000 TDD: (800) 900-3179

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Senior District Manager: Blayne Long; Sales Associate: Jasmine Huffman, 875 N. Michigan Avenue, Suite 2846, Chicago, IL 60611 (312) 943-4266 Fax: (312) 943-2214

NORTHWEST

Director: Ernie Chamberlain; District Manager: Tom Vonsek; Senior Account Executives: Claude Garbarino, Julie Compton; Sales Associates: Stefan Mayo, Brian Shindledecker; Sales Operations Coordinator: Madeleine Poquiz; Office Services: Jessica Abude; Sales Coordinator: Yvonne Zuniga, 177 Bovet Road, Suite 400, San Mateo, CA 94402 (650) 357-0200 Fax: (650) 524-7000 TDD: (800) 900-3179

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Reynolds and Reynolds	1.88

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INDUSTRY ALMANAC

Semiconductor forecast

It's no secret that weak Asian economies have undermined the semiconductor market. But an industry research firm predicts that key segments of the market could strengthen by mid-1999. In a study released last week, Dataquest predicts that the worldwide semiconductor market will decline 8% this year but will grow by 11.8% next year to $159 billion if the shaky dynamic RAM market improves. If the DRAM market doesn't get better, the semiconductor market will grow by 9.7%, Dataquest predicts.

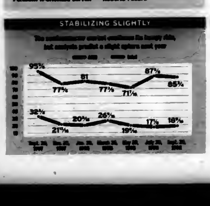
Kenneth Pearlman, an analyst at CIBC Oppenheimer in New York, says DRAM is the obvious swing factor because it forces vendors to drive down their prices to cost, so revenue drops. But vendors are trying to get supply more in sync with demand by taking some production off-line, he says.

Key players in the market include high-speed chip makers Advanced Micro Devices, Inc. (Nasdaq:AMD) in Sunnyvale, Calif., which early last month released the K6-II chip; and Intel Corp. (Nasdaq:INTC) in Santa Clara, Calif., which recently released its 333-MHz Celeron and 450-MHz Pentium II chips.

Tim Mahon, a senior semiconductor analyst at San Francisco-based brokerage Volpe Brown Whelan & Co., says his firm rates AMD as a Hold and Intel as a Buy. The brokerage raised its estimates for AMD because it had indications that the company will ship more processors this quarter than originally predicted.

"The sub-$1,000 [desktop PC] market has helped [AMD], and they've done a good job [teaming] with Compaq and IBM," Mahon says. But with Intel's Celeron targeted toward the same sub-$1,000 market, it will be tougher for AMD to compete, he says. Intel is rated higher, Mahon says, mostly because of its breadth of products, such as its new Xeon Pentium II-oriented server. — Roberta Fusaro

STABILIZING SLIGHTLY



Exch	52 Week	Range		Oct 2 2 PM	Wk Net Change	Wk Pct Change
COMS	16.75	22.94	3 COM Corp	30.38	1.00	3.4
AIT	52.19	36.11	AMERITECH Corp	51.75	1.00	2.0
ASND	55.06	22.00	Ascend Communications	59.68	7.56	15.9
T	60.50	40.38	AT & T	59.00	0.69	1.1
BNYN	15.38	2.13	Banyan Systems Inc	1.00	0.19	8.7
BEL	55.00	37.16	Bell Atlantic Corp	31.44	3.63	7.6
BLS	38.11	45.25	BellSouth Corp (H)	27.31	2.44	3.3
BRKT	22.75	8.50	Brooktrout Technology	13.88	1.88	12.3
CS	35.00	6.63	Cabletron Systems	10.63	0.00	4.9
CGRM	21.88	3.25	Centigram Communications (L)	7.38	1.25	14.3
CSCO	30.75	30.38	Cisco Systems Inc	56.94	-9.19	11.9
CMNT	8.50	3.38	Computer Network Tech	5.56	-0.31	5.5
CNCX	41.00	7.88	Concentric Network Corp	10.38	3.56	16.1
FORE	38.00	10.38	FORE Systems Inc (L)	12.09	7.44	31.1
GDC	7.25	3.50	General Datacomm Inds	2.81	0.38	10.0
GSX	41.75	31.38	General Signal Networks (L)	17.00	2.13	6.1
GTE	64.38	40.50	GTE Corp	58.50	4.75	8.8
LU	104.00	59.19	Lucent Tech.	63.81	13.00	17.0
MADGF	8.75	2.63	Madge Networks NV	2.75	-0.75	-8.5
WCOM	51.88	28.00	MCI WorldCom	46.63	-2.81	-5.7
NETM	5.25	0.96	NetManage Inc	1.13	-0.13	10.8
NTRX	3.00	0.63	Netrix Corp	1.58	-0.08	21.4
NCDI	13.75	1.00	Network Computing Devices (L)	1.88	-0.56	-0.0
NWK	20.63	8.94	Network Equipment Tech (L)	9.81	-0.44	-4.3
NN	60.38	16.00	Newbridge Networks Corp (L)	16.75	-3.69	18.0
NT	69.25	59.44	Northern Telecom Ltd. (L)	31.06	18.00	-24.4
NOVL	13.63	8.81	Novell Inc	11.75	-0.38	-4.1
ODSI	15.44	2.38	Optical Data Systems Inc	3.88	0.38	56.7
PCTL	11.94	2.38	PictureTel Corp	6.00	1.00	14.5
OPEN	3.36	0.38	Proteon Inc	1.00	-0.08	59.1
RACO	4.13	1.00	Racotek Inc	2.00	0.00	1.2
RADS	24.38	1.81	Radiant Systems Inc	6.75	1.50	28.6
VRTL	30.13	1.88	Retix	2.06	-0.08	-2.9
SBC	43.00	30.00	SBC Communications	44.00	4.63	10.9
SFA	23.00	12.00	Scientific Atlanta Inc	11.08	3.88	99.1
SHVA	14.69	1.38	Shiva Corp	3.94	-0.08	-8.1
FON	80.13	48.75	Sprint Corp	75.44	1.75	3.3
QWST	43.00	22.00	QWest Communications Inc	33.83	-1.75	-4.7
SMSC	17.75	6.75	Standard Microsystems Corp	6.88	-0.63	-8.5
USW	58.38	36.88	U S West Inc	54.19	1.00	1.9
XIRC	27.83	8.00	Xircom	22.15	3.00	-12.2
XYLN	31.31	9.00	Xylan Corp	11.47	-1.16	9.2
AAPL	45.75	12.75	Apple Computer Inc.	39.00	-3.81	-9.8
CPQ	39.13	23.13	Compaq Computer Corp	28.69	4.19	12.4
DELL	60.25	13.00	Dell Computer Corp (H)	44.94	-4.00	-6.1
GTW	60.75	25.00	Gateway 2000 Inc.	49.11	-6.00	10.8
HWP	82.00	41.75	Hewlett Packard Co	51.00	3.50	-6.4
MUEI	18.75	8.06	Micron Electronics Inc.	16.88	0.25	1.5
NIPNY	63.80	31.00	NEC America (L)	32.25	-1.75	-3.7
SGI	27.50	8.08	Silicon Graphics	9.00	-0.94	8.4
SUNW	53.31	30.38	Sun Microsystems Inc (H)	43.94	0.19	15.1
DGN	27.60	3.00	Data General Corp	10.38	-1.50	12.6
IBM	138.13	88.63	IBM	125.38	-8.44	-6.4
MDCD	6.62	1.38	Mendocino Data Inc	1.18	-0.14	18.0
NCR	58.50	35.50	NCR Corp	29.00	0.00	1.3
PRCM	19.63	3.50	ProCom Technology Inc.	4.81	-0.19	-3.8
SQNT	27.56	5.75	Sequent Computer Sys.	2.75	-1.31	38.5
TEXM	8.00	3.44	Texas Micro Inc (L)	2.50	-0.55	-8.1
SRA	30.38	75.48	Stratus Computer Inc.	89.25	5.75	15.2
UIS	30.60	11.13	Unisys Corp	21.00	-5.00	14.6
ADBE	52.69	25.63	Adobe Systems Inc.	33.81	0.44	1.5
AMSWA	15.41	2.25	American Software Inc. (L)	2.50	0.00	0.0
APLX	38.25	2.06	Applix Inc.	3.75	-0.11	-4.3
ARDT	13.86	6.63	Ardent Software	11.00	1.38	11.0
ARSC	16.18	11.88	Aris Corp (L)	17.00	3.81	24.5
ADSK	31.13	22.25	Autodesk Inc.	25.31	-0.56	-2.8
BMCS	80.25	23.38	BMC Software Inc. (H)	52.38	3.38	-3.3
BOOL	30.38	17.13	Boole and Babbage	23.00	-0.38	-2.1
BOBJY	80.80	8.75	Business Objects	11.63	1.44	12.3
CAYN	5.38	3.75	Cayenne Software Inc.	0.75	0.00	14.5
CNTR	5.00	0.88	Centura Software	1.13	0.00	0.0
CHKPF	50.50	10.88	CheckPoint Software	20.25	-2.19	-9.1
COGNF	30.38	08.00	Cognos Inc. (L)	16.00	1.00	-5.7
CA	61.00	26.00	Computer Associates	34.00	-0.41	1.8
CPWR	89.00	27.63	Compuware Corp (H)	10.11	10.00	13.5
CSRE	9.83	2.50	Comshare Inc	3.75	-0.00	1.8
COSFF	4.44	1.00	Corel Corp	2.00	-0.13	-8.5
DWTI	4.88	2.00	Dataware Technologies Inc.	2.03	0.00	0.0
DCTM	80.63	38.38	Documentum Inc.	54.75	5.75	14.2
FILE	32.88	3.75	FileNet Corp	12.44	-5.63	-22.3
FRTE	15.13	3.78	Forte Software	3.19	-0.19	-5.6
GPSI	49.00	50.38	Great Plains Software, Inc (H)	41.75	1.00	-8.5
HUMCF	94.25	18.00	Hummingbird Comm Ltd.	19.44	-1.25	-6.0
HYSL	35.25	18.31	Hyperion Solutions Corp.	38.31	-6.50	26.2
IRIC	80.00	9.75	Information Resources	12.88	0.19	1.4
IFMX	30.44	2.88	Informix Corp	4.18	-0.56	-7.5
INFR	12.19	4.00	Inference Corp	6.00	-0.19	-1.0
INGR	14.19	5.00	Intergraph Corp	6.00	0.00	0.9
LEAF	4.00	0.75	Interleaf Inc.	1.00	0.15	14.3
INTU	67.19	27.00	Intuit Inc.	42.75	-2.50	-5.3
JDEC	49.00	24.88	J.D. Edwards Co. (H)	35.75	11.00	24.9
TLC	32.81	15.38	Learning Co. (The)	80.19	1.63	-7.4
MANU	80.40	9.00	Manugistics Group, Inc.	9.00	1.53	10.1
MAPS	14.25	8.38	MapInfo Corp	10.31	-0.44	-4.1
MATH	4.00	1.75	MathSoft	2.88	-0.38	13.6
MENT	12.00	8.00	Mentor Graphics (L)	7.00	0.03	0.4
MIFCY	80.00	20.50	Micro Focus	23.88	-2.11	-8.2
MGRI	74.88	6.16	Micrografx Inc	9.11	-0.88	8.0
MSFT	119.63	59.00	Microsoft Corp	104.11	1.75	-6.9
OBJS	5.25	0.44	ObjectShare, Inc	1.28	0.22	20.6
OMTL	15.00	1.94	Omtool Ltd.	3.13	0.13	4.2
ORCL	37.75	17.75	Oracle Corp.	26.00	2.88	10.0
PMTC	56.11	9.00	Parametric Technology	30.13	0.13	1.3
PSFT	51.44	25.00	PeopleSoft	23.06	-7.00	24.2
PTEC	30.38	5.06	Phoenix Technologies (L)	8.75	-0.19	-2.9
PSQL	23.25	2.58	Platinum Software	9.44	-1.00	-15.7
PLAT	34.75	10.50	Platinum Technology (L)	15.10	-3.81	-19.7
PRGS	28.13	12.63	Progress Software Corp	26.25	0.00	0.0
RNBO	80.13	30.44	Rainbow Technologies Inc.	12.50	1.25	11.1
REDB	30.13	1.88	Red Brick Systems Inc	2.06	-0.00	-2.9
ROSS	5.40	2.00	Ross Systems, Inc.	2.81	0.19	7.1
SAP	80.13	33.63	SAP AG (L)	33.63	-9.10	-21.5
SCOC	6.83	0.88	SCO Inc.	3.31	0.31	10.9
SDTI	42.75	8.38	Security Dynamics Tech.	10.75	-2.00	15.7
SSW	52.81	16.25	Sterling Software Inc.	20.50	2.63	11.6
SDRC	24.00	8.75	Struct. Dynamics Research	11.00	-0.88	3.5
SYBS	23.00	5.16	Sybase Inc.	5.81	-0.31	-5.1
SYMC	32.63	31.00	Symantec Corp. (L)	11.06	2.50	18.4
SNPS	47.13	24.50	SynOpsys	31.50	-1.39	-3.8
SSAK	15.00	3.44	System Software Assoc	4.81	1.15	18.9
SYSF	10.75	0.56	Systemsoft Corp	0.53	-0.08	14.5
BAANF	55.50	22.38	The Baan Co. (L)	22.50	-5.19	18.1
TRUV	5.19	0.75	Truevision Corp	1.00	-0.19	15.0
VIAS	94.44	5.25	Viasoft Inc.	6.00	1.00	20.6
VSIO	30.38	10.00	Visio Corp	21.56	-4.44	11.1
WALK	20.44	5.25	Walker Interactive Systems	8.00	1.13	12.5
WALL	30.38	10.13	Wall Data Inc.	14.63	-0.13	-0.8
WANG	32.25	13.75	Wang Laboratories Inc (L)	18.00	0.00	0.0

Note: Intersolv Inc. acquired by Micro Focus

Exch	52 Week	Range		Oct 2 2 PM	Wk Net Change	Wk Pct Change
AMZN	141.00	21.13	Amazon.com	109.50	1.63	1.5
AOL	140.10	32.00	America On-Line	103.63	-11.81	10.2
ATHM	51.25	10.06	At Home Corp	43.50	1.19	2.7
EDFY	22.13	4.88	Edify Corp	8.50	-0.19	-2.8
XCIT	55.38	8.00	Excite, Inc.	18.00	3.00	-7.3
SEEK	45.00	3.13	Infoseek Corp	23.75	-2.25	-8.7
LCOS	53.63	9.81	Lycos Inc.	31.63	3.12	-9.0
NSCP	44.10	14.88	Netscape Comm Corp.	20.38	-3.00	19.8
NSOL	10.00	11.75	Network Solution Inc	18.23	-5.25	12.1
OMKT	29.11	8.00	Open Market Inc.	9.75	1.63	14.5
PEGS	31.00	10.75	Pegasus Systems	11.44	-0.56	-4.1
PSIX	21.94	4.25	PSINet	12.88	2.44	15.9
QDEK	3.13	0.25	Quarterdeck Corp	0.44	-0.47	-51.1
SCUR	15.25	6.38	Secure Computing Corp	10.10	-0.13	1.2
SPYG	15.38	4.00	Spyglass Inc	11.63	-1.31	-10.3
YHOO	134.00	11.13	Yahoo! Inc (H)	121.00	5.00	2.5
AMD	33.44	12.75	Advanced Micro Devices	10.06	1.09	-8.5
ADI	39.63	12.94	Analog Devices Inc	75.00	5.44	-8.4
CRUS	17.75	5.16	Cirrus Logic (L)	5.94	-0.44	-6.9
CY	15.63	5.50	Cypress Semiconductor Corp.	8.94	-0.08	-0.7
INTC	95.63	69.00	Intel Corp	84.50	3.25	3.7
LSCC	44.50	25.25	Lattice Semiconductor (L)	24.25	-0.09	2.8
LSI	12.69	11.63	LSI Logic Corp	12.06	1.06	10.2
MCRL	46.88	21.58	Micrel Semiconductor Inc	25.00	-6.16	19.7
MU	56.94	30.18	Micron Technology	28.56	3.63	-11.3
MOT	75.19	39.06	Motorola Inc.	40.19	3.44	15.6
NSM	33.38	8.00	National Semiconductor	9.25	-0.81	-8.1
RMBS	71.88	35.50	Rambus Inc (H)	60.00	-3.19	5.5
TXN	71.25	80.63	Texas Instruments	00.00	-3.63	-6.3
VLSI	37.75	3.00	VLSI Technology	3.87	-0.50	-6.0
XLNX	35.81	38.38	Xilinx	34.00	5.44	11.8
ADPT	54.25	8.91	Adaptec Inc (L)	8.91	-1.94	12.6
APCC	59.50	32.15	American Power Conversion (H)	35.00	-1.00	-2.9
ANDA	2.75	0.10	Andataco Inc	0.87	0.00	0.0
CREAF	29.38	8.75	Creative Technology Ltd.	9.25	-0.25	-2.6
RACE	9.00	0.50	Data Race Inc.	1.00	0.00	0.0
DTM	33.00	7.86	Dataram Corp	11.94	0.00	0.5
EMC	63.50	23.50	EMC Corp	51.75	3.09	15.0
EMLX	19.75	5.31	Emulex Corp	11.50	0.00	0.0
ESCC	35.00	11.63	Evans and Sutherland (L)	12.88	2.25	15.4
EXBT	12.75	5.00	Exabyte	6.25	-0.63	-9.1
HSFD	4.60	0.08	Intelligent Info. Systems	0.47	0.03	7.1
IOM	16.75	5.44	Iomega Corp.	3.75	-0.38	13.0
KMAG	21.75	2.25	Komag Inc	3.06	-0.09	1.0
MTSI	31.00	10.88	Micro Touch Systems Inc	12.38	-0.15	1.0
MTIC	11.00	3.31	MTI Technology Corp	8.11	-1.15	-15.3
AQM	23.00	2.25	QMS Inc	3.75	0.87	27.7
QNTM	41.13	10.81	Quantum Corp	15.00	-1.50	-9.1
RDUS	0.88	0.08	Radius Inc (L)	1.00	0.06	-5.9
SEG	80.00	16.10	Seagate Technology	24.00	-0.38	-2.8
SDS	32.00	2.44	Storage Computer Corp	2.38	0.00	0.0
STK	31.13	21.00	Storage Technology	24.19	3.44	12.4
TEK	80.19	15.19	Tektronix Inc.	15.75	-0.15	-1.6
WDC	42.75	8.00	Western Digital Corp	8.88	-3.06	-9.7
XRX	116.50	80.19	Xerox Corp	19.00	1.38	2.1
AMSY	30.00	18.25	American Mgmt Systems	22.13	-2.00	-17.8
ANLY	38.00	20.00	Analysts Inc	22.00	-7.88	-28.4
AUD	80.44	41.58	Auto Data Processing (H)	68.44	10.75	13.5
CATP	38.38	75.00	Cambridge Tech Partners (L)	38.00	-8.56	29.3
CEN	44.00	35.25	Ceridian Corp	56.56	3.25	5.4
CDO	25.25	12.44	Comdisco Inc.	13.94	-1.83	-10.4
CPU	56.00	11.25	CompUSA Inc	25.44	-8.56	-22.5
CMRZ	33.50	30.38	Computer Horizons	25.00	-2.00	3.3
CSC	76.88	33.63	Computer Sciences	38.38	-11.00	19.2
TSK	45.00	23.00	Computer Task Group	21.50	1.31	-4.8
EGGS	29.13	5.00	Egghead Discount Software	6.81	1.34	10.3
EDS	30.38	29.56	Electronic Data Systems Corp.	32.00	-2.06	-8.1
ICO	19.63	15.00	Inacom Corp (L)	17.56	1.44	8.9
KEA	80.94	24.00	Keane Inc.	34.19	-12.08	-26.1
MICA	29.63	80.00	MicroAge Inc. (L)	11.25	-1.75	13.5
PAYX	32.00	22.44	Paychex (H)	40.25	-0.91	-2.0
PMS	48.00	29.00	Policy Management Sys.	34.81	-5.44	13.5
REY	24.00	12.63	Reynolds and Reynolds	13.60	1.88	11.9
SAPE	63.00	23.00	Sapient Corp	27.50	-9.15	-34.6
SCBI	14.75	8.38	SCB Computer Tech. Inc.	2.25	-0.25	3.5
SEIC	80.50	32.75	SEI Corp	60.88	3.50	5.5
SMS	86.50	50.00	Shared Medical Systems (L)	50.00	-5.94	10.6
SSPE	24.25	10.75	Software Spectrum Inc	15.50	1.25	8.8
SDS	40.00	32.44	SunGard Data Systems	80.81	-9.44	-26.0
SYNT	38.38	5.09	Syntel, Inc	18.38	3.63	16.5
VST	18.75	7.13	VanStar Corp	8.00	-2.75	-31.5

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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IT projects survive cutbacks at Levi

By Cynthia Bournellis

IN RESPONSE to changing consumer demands, Levi Strauss & Co. last week announced plans to close some production facilities in the U.S. and Europe, reducing its workforce by more than 2,400. Despite the layoffs, the San Francisco-based apparel giant plans to move forward on two IT-related fronts.

"The company is committed to attracting talented IT people who can influence our ability to succeed in reaching our business goals," a company spokesman said. Foremost is a goal to support consumers. "Our information systems will play a significant role in this," he added.

Levi has a technical staff of 500 people in the U.S, and officials wouldn't comment on future hiring plans. But a spokesman said the company is working on several business initiatives that eventually could grow the information technology staff. One is a new consumer brand-management organization focused on building brands and developing products for specific markets. Initial efforts will begin in Europe.

Levi officials said the company also wants to improve the way it uses the World Wide Web to share information and create a closer connection with consumers worldwide, particularly via electronic commerce.

Levi said it was too early to discuss any specifics, but Bob Berger, an analyst at Berger Advanced Management Services in Hillsborough, Calif., said electronic commerce makes sense for apparel makers that want to reach customers in areas where they don't have retail outlets or solid distribution channels.

Establishing an online catalog could also increase IT's role in marketing because IT could use its data warehouse to collect purchasing information so that marketing could spot evolving buying trends, Berger said. □

IBM revamps price scheme

CONTINUED FROM PAGE 1

fits don't apply to customers with IBM's older VM and VSE operating environments. All the new pricing options are available only on the latest version of the OS/390 operating system (Version 2) and middleware products.

And it is conceivable that some users may end up paying more under the new pricing structures. For instance, it is still unclear how the new options will play out long term for corporations that run a mix of VM/VSE applications and OS/390, said Patricia Cicala, an analyst at Gartner Group, Inc. in Stamford, Conn.

Still, users and analysts said IBM's latest moves are a major step toward addressing long-standing software pricing and license management issues.

A FAIRER CALCULATION

Though hardware costs have been falling by over 30% annually, software declines have been much slower. One result: Software represents over 50% of data center costs, said John Young, an analyst at The Chipper Group in Wellesley, Mass. IBM's action will help bring software prices to "levels where it more fairly represents the value [software] brings to an enterprise," he said.

IBM said it will standardize on the two pricing models during the next 18 months. The options will be available in January. Here's how the new pricing scheme works:

IBM customers can choose to pay for software according to their hardware capacity (called the Parallel Sysplex capacity model) or by software usage (the S/390 Usage Pricing). Users can also choose a combination of the pricing models.

Under the Parallel Sysplex option, users of a mainframe system with more than 1,000 MIPS would pay for their software as if they used a Parallel Sysplex cluster of several mainframes — the more system capacity that is consumed, the steeper the discount. IBM assesses software fees to Parallel Sysplex users based on the aggregate MIPS capacity of their cluster. That costs less than if users paid for the MIPS on each mainframe system.

This option also expands the number of middleware software packages that are available for discounts of 25% for each MIPS over 1,000 MIPS.

The new scheme means "people won't be compelled to cluster unlike systems together just for getting more attractive software pricing," said Dan Kaberon, Parallel Sysplex manager at Hewitt Associates, a benefits management firm in Lincolnshire, Ill.

Under the new Usage Pricing scheme, IBM will establish a base charge and three usage tiers, which replace a complex system of "bands" describing usage and license fees. IBM said it will use enhanced measurement tools to make it easier for users to keep track of and pay for middleware products such as the DB2 database, CICS and MQSeries message-oriented middleware based on actual usage of the software.

IBM also announced a capacity-based cut-rate licensing option for users trying out new applications on mainframes running the latest OS/390 versions and 250 MIPS or less that lowers cost by 75%. □

How IBM's new mainframe software pricing works:

EXAMPLE OF EXISTING PLAN:

- Monthly license charge for average stack of OS/390 software needed to run SAP R/3 on a S/390 server at a level of 28 million service units (MSU) per month: $55,136
- Total monthly cost if server capacity is increased 46% and system is upgraded to provide 41 MSUs: $74,220
- Monthly increase: Around 35%

EXAMPLE OF NEW PLAN:

- Same result can be achieved by dedicating new, used or existing system to handle extra workload under the Application Growth Environment option. Cost: $4,667
- Total monthly cost: $59,803
- Monthly increase: Around 10%

Source: IBM

CME's overhaul

CONTINUED FROM PAGE 1

speed information and analysis to the trading floor. Dropping OS/2 in favor of NetWare also will make that part of the system year 2000-compliant.

"Say your average technician makes $150,000 a year with salary and benefits and office space. If that technician could focus on development, instead of just service, that would be $150,000 worth of development you didn't have before," said Dan Kusnetzky, an analyst at International Data Corp. (IDC) in Sarasota, Fla. IDC is a sister company to *Computerworld*.

"This should allow our traders to trade smarter, make more money and increase our volume. And volume is what funds the exchange," said Michael Salvador, who, as the CME's lead network engineer, is often information technology's liaison with the traders. "When they need information, they can't wait 10 seconds. The market could completely change in 10 seconds, and then they're losing money," Salvador said.

UPPING TRADING SPEED

The overhaul at the CME, one of the country's largest marketplaces for trading futures contracts and options on futures, still needs final board approval. But John Hart, director of the company's MIS department, said approval is likely, adding that he hopes to get started on the yearlong project by early December. The servers and software alone will cost $600,000, he said.

The CME expects to increase trading speed even though it will have fewer servers, said Jeff Miller, the exchange's senior enterprise network engineer. Twelve to 14 NetWare servers will replace 20 to 25 NT servers and 40 OS/2 servers.

Fewer NetWare servers can do a better job than the previous slew of servers because NetWare scales better, handles more users and is easier to manage, Miller said. The extra speed and increased capacity will let Miller deliver analytical tools and spreadsheets to the traders — something they have been asking for, but that the current system hasn't been able to handle.

"NetWare 4.0 would support more users than NT 4.0, and NetWare 5.0 will support even more and be quite a bit faster than that," Miller said.

He also said the switch in operating systems should slash the time IT spends on support calls. Right now, Miller said, he has six technicians who spend 100% of their time on service and support. He expects that to drop to 30%.

Furthermore, the exchange's eight IT executives spend about 70% of their time picking up support calls that are too complicated for technicians. That should drop to 10% or less, leaving them much more time for application development, Miller said. Salvador and Miller said their support headaches will be eased by implementing Novell Directory Services (NDS), which was designed to track various client operating system components from one central server, and ZENworks, a remote administration tool that lets IT workers do diagnostics, maintenance and software distribution from theis own desks.

The CME probably also will use Novell's NDS for NT 2.0 tool, which replaces NT's domain system with NDS. Miller is interested in checking out NDS for Solaris as well.

NDS automatically updates the central database of all clients' settings across the network, whereas NT's domains must be manually managed on each server. With NDS on most of its servers, the CME will have an umbrella directory to manage much of its system from a central point, Miller said.

Miller said be also expects to save time in desktop setup.

"With ZENworks and NDS, we could push all the software down and do most of the configurations from one place. . . . We wouldn't be running all over. That could save . . . easily months and months of work time," Miller said, referring to the 950 new PCs that will be coming in. □

The Chicago Mercantile Exchange is overhauling its computer system. Some changes include:

- Replacing 40 OS/2 servers and 20 to 25 Windows NT servers with 12 to 14 NetWare servers
- Dumping IPX for 100% TCP/IP
- Replacing a Token Ring network with an Ethernet network
- Replacing 950 PCs

Buried Web data lies untapped

CONTINUED FROM PAGE 1

But industry watchers say that as electronic commerce continues to mature, more sites will want to mine that data. "There's a huge challenge and a huge opportunity for IT," said Matthew Roche, president of Fort Point Partners, Inc., a San Francisco Web consultancy that has done work for Egghead.com, The Gap, Inc. and J. Crew Group, Inc., among others.

Information technology executives who look at new ways to generate revenue from that data "can be an enormous contributor," he said. Those who don't are likely to find such projects outsourced.

"I have a huge amount of data on my Web site that I'm not using right now," said Elizabeth Rose, vice president of strategic planning and new business development at BMG Music Service in Indianapolis. BMG runs a music-purchasing club with 8 million members, most of whom buy their CDs and cassettes via mail or phone orders.

About 10% of club members have visited the site, located at *bmgmusicservice.com*, and Web buyers tend to buy 20% more than the average mail order. "We are looking to better mine and cross-tabulate what we have," agreed Ben Boyd, a spokesman for Barnesandnoble.com, a New York-based online bookseller. As tools improve and other pressing projects are completed, such work is likely to progress.

Many sites are still nailing down basics such as ensuring reliability and quick response times, as well as working on frequent site enhancements and updates required in the fast-paced Internet world. They have yet to move to the next stage.

Then there's the time and effort needed to use tools that present customized content based on data mining.

"There's nothing out there that you can buy and, all of a sudden, your site is personalized," said Dan Leichtenschlag, vice president of engineering and chief technical officer at CBS SportsLine USA, Inc. in Fort Lauderdale, Fla. But he said he expects IT departments to start putting programming time into such efforts.

"A lot of focus in the next year is going [to be] on this," Leichtenschlag predicted.

"Next year is going to be the year of 'conversion rates' [turning visitors into buyers]," Roche agreed. "The only way you do that is by analyzing data."

Before sites worry about more personalization based on mountains of data, Roche said, they can do things such as analyze general click-stream paths in system logs to determine their most effective features.

BMG already had an extensive data-analysis operation for its music club. With the Web site, it created a new transaction in its mainframe database to mark an existing member as an Internet user and regularly send data between the Web server and mainframe. The company can compare the effectiveness of various print and Internet marketing campaigns and can look at purchasing behaviors and how Internet orders compare with those by mail.

But BMG still doesn't track how often each Internet user goes to the Web site or what pages they visit while there. "I would love to," Rose said. "I am too busy to think about it right now," with four other projects on the front burner. The Web data project, she said, will be No. 5 on her list.

Cross-matching a demographics database with logs detailing user habits and then coming up with automated site response is "really hard," Roche said. One potential trip-up: slipping a processor-intensive task such as database-checking into a user's surfing can slow site performance.

"If you cut your response time in half, you will cut your revenues in half. We have seen it on four or five major sites," Roche said. "Given that, would you put a heavy-duty process on a click?" Analyzing that data in less than real time may be a better bet for now. □

A sample of personalization/analysis vendors

COMPANY	PRODUCT
Andromedia, Inc. *San Francisco*	ARIA data mining and trend analysis
Vignette Corp. *Austin, Texas*	Story Server (manages customer relationships)
Art Technology Group *Boston*	Dynamo relationship commerce software suite
Firefly Network, Inc.* *Cambridge, Mass.*	Passport personalization, Network Hub

*Purchased by Microsoft Corp. in April 1998

Tips on acquiring and using customer data on the Web:

- Encourage customers to enter the serial number of their products at the company Web site
- Offer a periodic E-mail newsletter with tips and techniques for obtaining additional value from a product
- Use a product's model number to display help information for the particular model

Source: Cliff Allen, co-author of the book Internet World Guide to One-to-One Web Marketing

Peapod does it right

Though few companies are taking full advantage of the information they have about their Internet users, online grocer Peapod, Inc. is one company site that has gotten high marks for exploiting such data.

The Skokie, Ill., company developed proprietary technology, called the Universal Event Processor, that includes demographics, purchasing patterns and how each customer navigates its site. A separate business unit, Peapod Interactive Marketing, uses that data to offer research into online shopping habits.

"I have not found another company that has done this good a job at integrating a personalized Web site with their off-line operations," said Cliff Allen, co-author of the book *Internet World Guide to One-to-One Web Marketing*.

For now, revenue from that information is "only a couple of million dollars," according to Peapod Chief Operating Officer John Walden. But as Peapod membership grows from 100,000 or so now to 300,000 to 500,000, there should be critical mass for targeting products and promotions by demographics.

"That's a pretty profitable business and should be more profitable for us in the long term," Walden said.

Allen also noted that Peapod runs data mining software nightly to summarize information collected on the site each day so that executives can review it the next day. "Peapod did a superb job of integrating the customer's experience with multiple database applications," he said. — Sharon Machlis

Lotus links servers to handhelds

By Roberta Fusaro

USERS ON THE ROAD seeking to get mail, calendar and directory information from Notes and Domino databases may have an easier time of it now.

Lotus Development Corp. in Cambridge, Mass., last week released Wireless Domino Access (WDA), server software that lets users of 3Com Corp.'s PalmPilot and Palm III, as well as IBM's WorkPad version of the PalmPilot, grab their information via a wireless connection.

WDA users can access their information on a Domino server via a palm-size device, a microbrowser from Orlando, Fla.-based Unwired Planet, Inc. and a cellular data network such as AT&T Corp.'s PocketNet service.

Lotus' mobile vision isn't unique, "but it's notable how well they're executing on it," said Steve Weissman, an analyst at Kinetic Information, Inc. in Waltham, Mass.

FLITTING MANAGERS

"It's perfect for a manager who is flitting among buildings on a campus," he said.

And that's just what managers at the U.S. Fish & Wildlife Service, a division of the Department of the Interior, do, said Jim Turner, head of advanced technology at the agency. Wireless technology is important to the agency's biologists, who are constantly traveling to ecological sites and need department knowledge at their fingertips.

The agency uses AT&T PocketNet phones in the field, and some Fish & Wildlife managers were recently outfitted with PalmPilots. Turner said that with WDA, they would be able to get real-time scheduling information to determine who is available for a meeting. Likewise, they could send real-time E-mail requests during a meeting and get answers while still in the meeting, he said.

Turner said his business managers would be able to access intranet applications via Hypertext Markup Language. That way, if managers are being challenged in meetings, or if questions arise, they could just pull up a document that backs them up, he said.

Lotus has pursued links to the PalmPilot because it leads the handheld market, Weissman said, but the next logical target would be Windows CE devices. Lotus officials confirmed they are seeking to develop links with other devices.

The WDA software costs $3,000. Lotus was slated to display the technology this week at Internet World Fall '98 in New York.

The software comes bundled with the Lotus Pager Gateway, which links Notes and Domino data to pagers. The company also has a data synchronization tool for handhelds, called Easy-Sync for Notes. □

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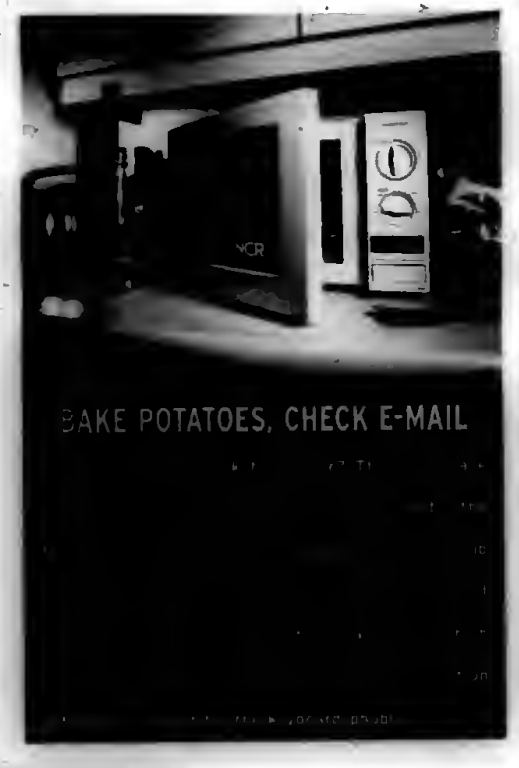
Dispatches & images from the fringes of the electronic frontier



Digital archives

20 YEARS AGO
(OCTOBER 1978)

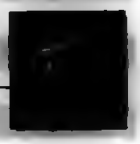
- The first Personal Computer Expo is held in New York.

10 YEARS AGO
(OCTOBER 1988)

- Steve Jobs' Next, Inc. unveils the first Next computer. For $6,500, it features a 25-MHz Motorola 68030 processor, 8M bytes of RAM, a 17-in. monochrome monitor and the NextStep object-oriented operating system.
- IBM wins the contract to modernize the FAA's air-traffic control systems.
- Ashton-Tate releases dBase IV for MS-DOS.
- Microsoft, IBM ship OS/2 1.1 Standard Edition with Presentation Manager.

TOP 10 Internet celebrities*

1. President Clinton
2. Pamela Anderson
3. Madonna
4. Cindy Crawford
5. Gillian Anderson
6. Demi Moore
7. Jenny McCarthy
8. Monica Lewinsky
9. Bill Gates
10. Michael Jordan



*Most-mentioned celebrities on the Internet, after release of the Starr report

Source: Web20, Palo Alto, Calif. (www.webnet.com/story)

THE FIFTH WAVE *by Rich Tennant*

E-Mail: Rich Tennant at thefifthwave@tiac.net

"Hold on there, boy! You think you're gonna install Windows 95 on old '286' yourself? Well you'd better hope to high heaven she's in a good mood today."

Inside Lines

Fingerprinting goes portable

As many as six major laptop makers will demonstrate specially equipped machines at Comdex next month that fingerprint their users. Tom Rowley, CEO of Veridicom in Santa Clara, Calif., said a dozen computer makers are working with his company's Open Touch system, which stores a user's print in the computer CMOS memory and then requires a finger with the appropriate print in order to boot up. The technology, originally developed at Bell Labs, hikes a laptop's price by about $100. Other applications: smart-card readers, corporate security systems and car locks.

Mercenaries in Utah

"Don't mess the giant" is the motto-du-jour at Novell, where boss man Eric Schmidt wants his minions to stop battling rival Microsoft Corp. and start making money off Windows NT. But are they getting too cynical? Novell director of marketing and Novell Directory Services (NDS) guru Michael L. Simpson said last week he doesn't care whether Novell NetWare or NT gains ground — as long as users pick up NDS for the system they're using. "We're like arms dealers for both sides," he said. "We supply the technology for both sides. We still make our money."

Presidential scandal hikes business

Special prosecutor Kenneth Starr's investigation into President Clinton's sexual activities cost U.S. taxpayers around $40 million — but the Internet version may have cost U.S. businesses 10 times that much, according to NetPartners Internet Solutions in San Diego. The company, whose business is helping customers monitor and control Internet usage, figures there were 25 million downloads of the written Starr report, and a million more of the video testimony — half of which were done at the office. "Using an average employee cost of $35 per hour, and an average view time of one hour, the total cost to employers is $472 million in lost productivity," the company concludes.

Finally, some real year 2000 support

First it was year 2000 clocks. Then came the T-shirts. Now the floodgates have opened with Y2K Stuff, an online catalog of year 2000-related trinkets ranging from stress balls to golf shirts at www.y2kstuff.com. Looking Glass Partners LLC, an Indianapolis-based marketing firm, claims its site was created as a "support system" for year 2000 professionals. Uh huh. "Support" in this case includes a memo pad with the catch-phrase "The end of the world as we do it" and coffee mugs labeled "Uh oh." Jewelry and special Christmas items also are in the works. Oh yes — there's even a link (just one) to a year 2000 consultancy.

Overheard

Veridicom's Tom Rowley, one of the inventors of voice mail: "Sometimes you have to look at that and say, 'God, what did I do?' " ... Erstwhile presidential candidate Pat Buchanan describing high-tech visa workers like farm laborers in a Sept. 6 *L.A. Times* opinion piece: "computer bracero." ... Immigration attorney Carl Shusterman in a Sept. 11 *L.A. Times* letter: "Next [Buchanan will] want the feds to tell the Chicago Cubs to send Sammy Sosa, that 'baseball bracero,' back to the Dominican Republic to free up a job for a U.S.-born outfielder." ... A House judiciary Committee attorney who couldn't disclose the status of the House's year 2000 disclosure bill: "We're in the midst of an impeachment proceeding."

Had enough of the Clinton-Lewinsky sex scandal online? A new petition drive — on the Internet, of course — is aimed at urging Congress to "Censure and Move On." The www.moveon.org site claims to have garnered 100,000 electronic signatures in its first week and is aiming at a million supporters before a House impeachment vote slated for this week. News editor Patricia Keefe will never get enough of your news tips and tidbits, scandalous or otherwise. E-mail her at patricia_keefe@cw.com or call (508) 820-8183.

IT'S HIS FIRST DAY ON THE JOB

(Or maybe it's just another nightmare.)

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